Ventura Countywide Stormwater Quality Management Program

Stormwater Quality Management Plan

Report

November 2001 (Revision 2)
January 2001 (Revision 1)
February 1999

Contents

Executive Summary **E-1**

Section 1 Program Management **1-1**

1.1 Stormwater Management Program 1-1
1.2 Permit Coverage / Provisions 1-2
1.2.1 Provisions 1-5
1.3 Institutional Arrangement 1-8
1.4 Program Structure 1-13
1.5 Monitoring and Reporting Program 1-16
1.6 Fiscal Resources 1-18
1.7 Legal Authority 1-21

Section 2 Residents **2-1**

2.1 Overview 2-1
2.2 Public Reporting 2-2
2.3 Stencil Program 2-4
2.4 Education and Outreach Program 2-5

Section 3 Industrial/Commercial Businesses **3-1**

3.1 Overview 3-1
3.2 Site Education / Inspection 3-2
3.3 Targeted Businesses / POCs 3-4
3.4 General Industrial Permit Facility Visits 3-5
3.5 Stormwater Quality Staff Training 3-8

Section 4 Planning and Land Development **4-1**

4.1 Overview 4-1
4.2 Land Use Planning and Environmental Review 4-2
4.2.1 Project Review and Conditioning 4-2
4.2.2 Environmental Review 4-5
4.2.3 General Plan Revisions 4-6
4.3 Development Standards – Technical Manual 4-9
4.4 Environmentally Sensitive Areas 4-10
4.5 Development Community Outreach 4-13
4.6 Stormwater Quality Staff Training 4-14

Section 5 Construction Sites 5-1
5.1 Overview 5-1
5.2 SWPCP Preparation, Certification, and Implementation 5-2
5.3 Incorporating Best Management Practices 5-6
5.4 Notice of Intent Requirement 5-9
5.5 Construction Site Inspection Program 5-10
5.6 Construction Community Outreach 5-14
5.7 Stormwater Quality Staff Training 5-16

Section 6 Public Agency Activities 6-1
6.1 Overview 6-1
6.2 Corporation Yards 6-2
6.3 Other Facilities 6-6
6.3.1 Drainage System Operation and Maintenance 6-6
6.3.2 Roadway Operation and Maintenance 6-9
6.3.3 Pesticide, Herbicide, and Fertilizer Application and Use 6-12
6.3.4 Stormwater Quality Staff Training 6-14

Section 7 Illicit Discharges/Illegal Connections 7-1
7.1 Overview 7-1
7.2 Incident Response 7-7
7.2.1 Source Determination 7-8
7.2.2 New Connections 7-8
7.2.3 Enforcement 7-9
7.3 Education 7-9
7.3.1 Materials 7-10
7.4 Illicit Discharges / Illegal Connections – Staff Training 7-10

Section 8 Program Evaluation 8-1
8.1 Overview 8-1
8.2 Performance Criteria 8-1
8.3 Internal Reporting 8-1
8.4 Annual Reports 8-2
8.4.1 Storm Water Monitoring Report 8-2
8.4.2 Annual Storm Water Report and Assessment 8-2
8.5 Stormwater Management Plan Revisions 8-2

Section 9 Monitoring 9-1
9.1 Proposed Structure of Monitoring Program 9-1
9.2 Discharge Characterization and Outfall Monitoring 9-3
9.2.1 Monitoring Site Descriptions 9-3
9.2.2 Storm Events Monitored 9-5
9.2.3 Monitoring Results 9-6
9.2.3.1 Water Quality Results 9-6
9.2.3.2 Bioassay Results 9-16
9.2.3.3 Comparison of Ventura County Mean Metals and Phosphorus Results to Other California Communities 9-17
9.2.4 Proposed Monitoring Effort 9-20
9.3 Receiving Water and Watershed Monitoring 9-22
9.3.1 Receiving Water Assessments 9-22
9.3.2 Monitoring Site Descriptions 9-22
9.3.2.1 Receiving Water Sites 9-22
9.3.2.2 Malibu Creek Watershed Receiving Water Sites 9-23
9.3.3 Storm Events Monitored 9-24
9.3.3.1 Receiving Water Sites 9-24
9.3.3.2 Malibu Creek Watershed Monitoring Sites 9-25
9.3.4 Monitoring Results 9-25
9.3.4.1 Receiving Water Sites 9-26
9.3.4.2 Bioassay Results 9-32
9.3.4.3 Malibu Creek Watershed Receiving Water Sites 9-32
9.3.5 Proposed Receiving Water and Watershed Monitoring 9-36
9.3.5.1 Revolon Slough Watershed 9-36
9.3.5.2 Bioassessment Monitoring in the Ventura River 9-37
9.3.5.3 Mass Emission Monitoring 9-38
9.3.5.4 Watershed Group and Regional Monitoring Participation 9-39
9.4 Pollutant Source Identification 9-40
9.4.1 Pollutant of Concern Identification and Prioritization 9-40
9.4.2 Proposed POC Source Identification Plan 9-41
9.4.2.1 General Source Investigation 9-41
9.4.2.2 Control Measure Investigation 9-43

9.5 Management Program Effectiveness 9-44
9.5.1 Control Measure Effectiveness 9-44
9.5.2 Pollutant Loading 9-44
9.5.2.1 Watershed Delineation / Land Use Specification 9-44
9.5.2.2 Current Pollutant Load Estimates 9-45
9.5.2.3 Proposed Activities to Improve Pollutant Load Estimates . 9-46
References 9-47

List of Tables

Table 1-1 Storm Drain Facilities 1-3
Table 1 Ventura County SMP Permit Milestones 1-23
Table 7-1 Discharges Not Identified as a Source of Pollutants 7-3
Table 9-1 Discharge Characterization Monitoring Location Characteristics ... 9-3
Table 9-2 Summary of Discharge Characterization Monitoring Dates 9-5
Table 9-3 Summary Statistics for Detected Constituents at A-1, Wood Rd. (1994-1998) 9-6
Table 9-4 Summary Statistics for Detected Constituents at C-1, Via Del Norte (1993-1996) 9-8
Table 9-5 Summary Statistics for Detected Constituents at R-1, Swan Street (1993-1998) 9-9
Table 9-6 Summary Statistics for Detected Constituents at R-2, Lawrence Way (1993-1996) 9-11
Table 9-7 Summary Statistics for Detected Constituents at I-1, Via Pescador (1993-1996) 9-12
Table 9-8 Summary Statistics for Detected Constituents at I-2, Ortega St. (1993-1998) 9-14
Table 9-9 Survival Rates of Ceriodaphnia for Discharge Characterization Monitoring Sites 9-16
Table 9-10 Summary of TIE Results 9-16
Table 9-11 Comparison of Industrial Land Use EMCs: Ventura County (1993-1998 vs. California Communities 9-18
Table 9-12 Comparison of Residential Land Use EMCs: Ventura County (1993-1998) vs. California Communities 9-19
Table 9-13 Proposed Discharge Characterization Monitoring 9-21
Table 9-14 Receiving Water Monitoring Location Characteristics 9-22
Table 9-15 Malibu Creek Watershed Monitoring Location Charactistics 9-23
Table 9-16 Summary of Receiving Water Monitoring Dates 9-24
Table 9-17 Summary of Malibu Creek Watershed Monitoring Dates 9-25
Table 9-18 Summary Statistics for Detected Constituents at W-1, Heywood St. (1994-1997) 9-26
Table 9-19 Summary Statistics for Detected Constituents at W-2, Alamo St. (1994-1997) 9-27

Table 9-20 Summary Statistics for Detected Constituents at W-3, La Vista Rd. (1997-1998) 9-28
Table 9-21 Summary Statistics for Detected Constituents at W-4, Revolon Slough (1997-1998) 9-30
Table 9-22 Survival Rates of Ceriodaphnia for Receiving Water Monitoring Sites 9-32
Table 9-23 Summary of TIE Results 9-32
Table 9-24 Summary Statistics for Detected Constituents at LC-1, Lindero Canyon (1996-1998) 9-33
Table 9-25 Summary Statistics for Detected Constituents at LV-1, Las Virgenes Creek (1996-1998) 9-34
Table 9-26 Summary Statistics for Detected Constituents at MC-1, Medea Canyon (1996-1998) 9-35
Table 9-27 Proposed Monitoring in Revolon Slough Watershed 9-36
Table 9-28 Proposed Bioassessment Monitoring Stations 9-37
Table 9-29 Proposed Mass Emission Monitoring Locations and Requirements 9-38
Table 9-30 Tier 1 and Tier 2 Pollutants of Concern 9-40
Table 9-31 General Sources of Tier 1 POCs 9-42
Table 9-32 Land Uses Within Ventura County 9-44
Table 9-33 Mean EMCs (1993-1996) used in Modeling Pollutant Loads 9-45
Table 9-34 Estimated Mean Annual Loads for Southern Ventura County 9-46

List of Figures

Figure 1-1 Area Covered by the Stormwater Management Plan 1-4
Figure 4-1 303d Listed Waterbodies 4-12
Figure 9-1 Locations of Rain Gages and Monitoring Stations 9-4

Appendices

Appendix A *Legal Authority*
Appendix B *Industrial/Commercial Business*
Appendix C *Planning and Land Development*
Appendix D *Construction Sites*
Appendix E *Co-permittee Facilities Activities and Maintenance*
Appendix F *Sample Illicit Discharge Reporting Form*
Appendix G *Monitoring*

Executive Summary

The Ventura County Stormwater Quality Management Plan, referred to as the SMP throughout this document, represents and defines the requirements of the Ventura County Municipal Storm Water National Pollutant Discharge Elimination System (NPDES) Permit (Board Order No. 00-108; NPDES Permit No. CAS004002) (Permit) adopted on July 27, 2000 by the California Regional Water Quality Control Board (RWCQB), Los Angeles Region, pursuant to Division 7 of the California Water Code.

The Permit applies to Ventura County Flood Control District (VCFCD), the County of Ventura, and the Cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks (hereinafter referred to separately as Co-permittees and collectively as the Discharger). VCFCD is the Principal Co-permittee for Permit implementation while the remaining entities, including the County of Ventura and the ten cities, are designated as Co-permittees.
As the Principal Co-permittee, VCFCD:

- Coordinates Permit activities;
- Establishes uniform data submittal format;
- Sets time schedules;
- Prepares regulatory reports;
- Forwards information to the Co-permittees;
- Arranges for public review;
- Secures services of consultants as necessary;
- Implements activities of common interest;
- Develops/prepares/generates all materials and data common to all Co-permittees;
- Updates Co-permittees on RWQCB and US Environmental Protection Agency (USEPA) regulations;
- Arranges for collection and payment of annual Permit renewal fee;
- Convenes all Management Committee and Subcommittee meetings;
- Manages the countywide educational program; and
- Manages the countywide stormwater quality monitoring program.

The Permit and the SMP are intended to develop, achieve, and implement a timely, comprehensive, cost-effective stormwater pollution control program to reduce pollutants to the maximum extent practicable (MEP). The Permit is in effect for discharges of stormwater and urban runoff from municipal storm drain systems within the urban areas of Ventura County and will expire on July 27, 2005.

As stated in the Permit, PART 3.B.1,

The Discharger shall modify the Ventura County SMP adopted with this Order to make it consistent with the requirements herein. The revised Ventura County SMP will be submitted to the Regional Board Executive Officer for approval no later than January 27, 2001

The following SMP has been modified to be consistent with the requirements of the Permit. There are nine sections to the SMP organized as follows:

- Section 1 – Program Management
- Section 2 – Programs for Residents
- Section 3 – Programs for Industrial/Commercial Businesses
- Section 4 – Programs for Planning and Land Development
- Section 5 – Programs for Construction Sites
- Section 6 – Programs for Public Agency Activities
- Section 7 – Programs for Illicit Connections/Illegal Discharges
- Section 8 – Program Evaluation
- Section 9 – Monitoring Program

Sections 1 through 7 contain the programs as specified in the Permit. Each section begins with a list of program elements, a description of each program element, Permit requirements, annual reporting requirements, and performance criteria. Direct quotes from the Permit are in italics with headings in bold. General guidance material is included as appendices.

Section 8 describes the evaluation program used to support and redefine the SMP in terms of program elements and performance criteria. Program evaluation of the SMP focuses on the accomplishments of the Co-permittees in implementing program elements and summarizes storm water quality results from the *Storm Water Monitoring Report* (see below). Results from this program evaluation and recommended modifications to the SMP are presented in the *Annual Storm Water Report and Assessment*, which is submitted, to the RWQCB on October 1 of each Permit year.

Section 9 describes the monitoring program used to support and redefine the SMP in terms of water quality. Results from water quality monitoring are presented in the *Storm Water Monitoring Report* and submitted on July 15 of each Permit year. This report covers results of water quality monitoring from the previous wet season, presents the status of the monitoring program implementation, and provides a general interpretation of the monitoring results, to the extent that data allows.

Acronyms are used throughout the SMP for brevity. For clarity, the acronyms used in the SMP are defined below.

BMP	Best Management Practice
CWA	Clean Water Act
MEP	Maximum Extent Practicable
NOI	Notice of Intent
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
Permit	Ventura County re-issued NPDES Permit CAS004002
RWQCB	Regional Water Quality Control Board
SMP	Ventura Countywide Stormwater Quality Management Plan
SWPCP	Stormwater Pollution Control Plan
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
USEPA	United State Environmental Protection Agency
VCFCD	Ventura County Flood Control District

Section 1
Program Management

1.1 Stormwater Management Program

This section defines and discusses the program management aspects of the Ventura County Stormwater Quality Management Plan (SMP). Program management elements include:

- Permit Coverage/Provisions;
- Institutional Arrangements;
- Program Structure;
- Monitoring and Reporting;
- Fiscal Resources; and
- Legal Authority.

1.2 Permit Coverage/Provisions

Program Description

The Ventura County Flood Control District (VCFCD), the County of Ventura, and the Cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks (hereinafter referred to separately as Co-permittees) have joined together to form the Ventura Countywide Stormwater Quality Management Program to control the discharge of stormwater and urban runoff from municipal separate storm sewer systems (MS4). Order No. 94-082 adopted by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, on August 22, 1994, issued the first National Pollutant Discharge Elimination System (NPDES) Permit to the Ventura County Co-permittees. Order No. 00-108, adopted by the RWQCB on July 27, 2000, re-issued the NPDES Permit, and is hereafter referred to as the Permit.

The Ventura Countywide Stormwater Quality Management Program (the Program) was established pursuant to Section 402(p) of the Federal Clean Water Act (CWA), which requires that all point source discharges of pollutants into Waters of the United States, including discharges from municipal separate storm sewer systems (MS4s), be regulated by a NPDES Permit. The NPDES Permit for the Ventura County Co-permittees covers the urban areas of the county and regulates discharges from municipal storm drain systems in Ventura County. Figure 1-1, located on page 1-4, shows the area covered by the Ventura County Stormwater Management Plan (SMP).

The County and City Co-permittees each own, operate, and maintain a MS4 within their respective jurisdiction. VCFCD is a regional agency that owns, operates, and maintains a MS4 countywide, with facilities located within the jurisdictional boundaries of the Co-permittees. These MS4s are regulated by the Permit and are covered by this SMP.

The MS4s in the permitted area of Ventura County, hereinafter referred to as a storm drain system, is defined as:

"…the conveyance or system of conveyance (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a Co-permittee, that is designed or used for collecting or conveying storm water, which is not a combined sewer, and which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

For the purposes of each Co-permittee, the length of their storm drain system is the total length of all storm drain systems owned and operated by the Co-permittee. The length of each storm drain system is the centerline distance, in linear feet, between the downstream end and upstream end of each storm drain system. The downstream end is defined as the point of discharge to the waters of the United States, or to a MS4 that is not owned or operated by the Co-permittee. The upstream end is defined as the point of entry to any storm drain system.

Table 1-1 (shown below) summarizes the length of the storm drain facilities owned, operated, and maintained by each Co-permittee.

Table 1-1

Co-permittee Agencies	Storm Drain System - Length in Linear Feet							
	Open Channel Soft Side AND Bottom	*Open Channel Hard Side OR Bottom*	*Open Channels Hard Side AND Bottom*	*Underground Storm Drains*	*Ditches*	*Gutters*	*Other Storm Drain*	*Total Length*
Principal Co-permittee								
VCFCD								0
Co-permittees								
City of Camarillo								0
County of Ventura								0
City of Fillmore								0
City of Moorpark								0
City of Ojai								0
City of Oxnard	12 miles	3 miles	5 miles	40 miles	*	400 miles		0
City of Port Hueneme								0
City of San Buenaventura								0
City of Santa Paula								0
City of Simi Valley								0
City of Thousand Oaks								0

* Included in Open Channel/Soft Side and Bottom

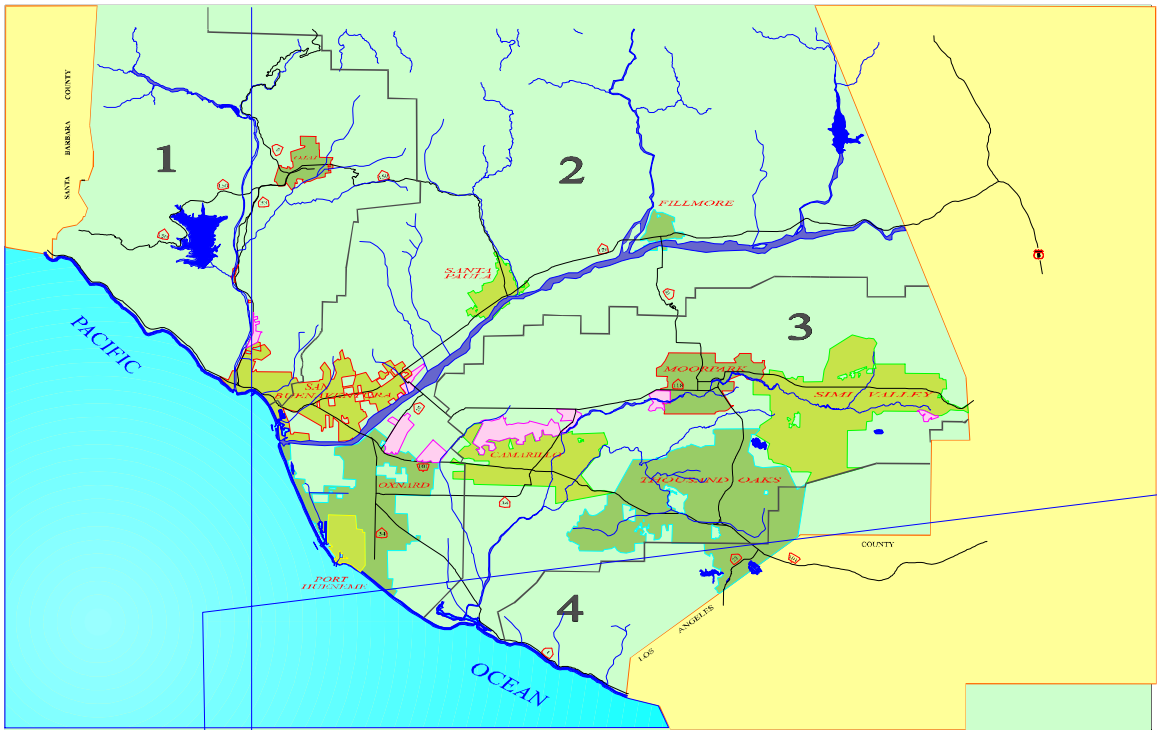

Figure 1-1
Area Covered by the Stormwater Management Plan

1.2 Permit Coverage/Provisions

1.2.1 Provisions

Program Description

The Ventura County Co-permittees filed a Report of Waste Discharge (ROWD) in February 1999. The February 1999 ROWD contained an application for renewal of waste discharge requirements and an application for a NPDES Permit to discharge stormwater and urban runoff from MS4s to surface waters. The February 1999 ROWD included the Ventura Countywide Stormwater Quality Management Plan (SMP), which described in detail all group activities and entity-specific activities. The SMP was revised in January 2001 to reflect the re-issued NPDES Permit requirements dated July 27, 2000, and again revised in November 2001 to reflect RWQCB comments on the January 27, 2001 revisions. This revised SMP, dated November 1, 2001, describes program details, the tasks required to accomplish permit requirements, the schedule for implementation of permit requirements, and performance criteria. The schedule and tasks are projected for the 5-year Permit period of July 27, 2000 through July 27, 2005 as shown in Table 1-2 (on page 1-24).

The implementation component of the SMP consists of the following elements:

- Program management
- Programs for residents
- Programs for industrial/commercial businesses
- Programs for land development
- Programs for constructions sites
- Public agency activities, and
- Programs for illicit discharge control

The SMP is specifically designed to develop, achieve, and implement a timely, comprehensive, and cost-effective stormwater pollution control program. The ultimate goal of the SMP is to reduce pollutants in Ventura County stormwater discharges to the maximum extent practicable (MEP).

The SMP is an enforceable component of the Permit and has been modified to be consistent with the Permit. This SMP covers activities for all areas within the boundaries of the cities as well as urbanized unincorporated areas of Ventura County, as depicted in Figure 1-1 (on page 1-4) and is organized as specified in the Permit as follows:

- Section 1 describes the overall program management activities.
- Sections 2 through 7 describe implementation activities for various management programs.
- Section 8 discusses methods that will be used to evaluate the overall program.
- Section 9 discusses the monitoring program.

Sections 1 through 7 describe proposed management programs and program elements that are consistent with Permit requirements. Each section includes:

- Program Description– a detailed account of each program element,
- Permit Requirements – citations from the Permit for the program element,
- Annual Reporting requirements – quotes from the Permit Program CI 7388, and
- Performance Criteria– identified actions for Co-permittees, as specified in the Permit.

General guidance material for each program is included as Appendices.

Section 8 describes the requirements to evaluate and assess the effectiveness of the SMP. Results of this process and stormwater quality results taken from the *Storm Water Monitoring Report* are used to generate proposed program modifications. Program evaluation and assessment, a general summary of stormwater quality, and proposed modifications to the SMP are presented in the *Annual Storm Water Report and Assessment.* Section 9 outlines the monitoring program for collecting stormwater quality samples and is the basis for the *Storm Water Monitoring Report*.

NPDES Permit CAS004002 Requirement(s)

Findings – 1.
Ventura County Flood Control District (VCFCD), the County of Ventura, and the Cities of Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks (hereinafter referred to separately as Co-permittees and jointly as the Discharger) have joined together to form the Ventura Countywide Storm Water Quality Management Program to discharge wastes under waste discharge requirements contained in Order No. 94-082, adopted by this Board on July 27, 2000. The Discharger discharges or contributes to discharges of storm water and urban runoff from municipal separate storm sewer systems (MS4s), also called storm drain systems, into receiving waters of the Santa Clara River, Ventura River, Calleguas Creek, and other coastal watersheds within Ventura County.

Findings – 6
The Discharger has filed a report of waste discharge (ROWD) and has applied for renewal of its waste discharge requirements and an NPDES permit to discharge wastes to surface waters. The ROWD includes the Ventura Countywide Storm Water Quality Management Plan (hereinafter called Ventura County SMP) which describes in detail all group activities and entity-specific activities. The Ventura County SMP also describes management measures that are included and how they are organized; it lists tasks required to accomplish the measure, the schedule for implementation, and specific goals. The schedule and tasks are projected for the 5-year permit period.

Findings – 12
This permit is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program to minimize pollutants to the maximum extent practicable in storm water discharges from the permitted area in Ventura County to the waters of the United States.

PART 3.B.1
The Discharger shall modify the Ventura County SMP adopted with this Order to make it consistent with the requirements herein. The revised Ventura County SMP will be submitted to the Regional Board Executive Officer for approval no later than January 27, 2001.

Annual Reporting

None Specified.

Performance Criteria

- Submit the new, revised SMP to RWQCB Executive Officer for approval by January 27, 2001.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

1.3 Institutional Arrangements

Program Description

The Co-permittees are separate legal entities who have entered into an implementation agreement, naming VCFCD as Principal Co-permittee. The division of responsibilities under the Permit will be in accordance with the implementation agreement (current edition described), which can be modified by the Management Committee. The responsibilities of the Principal Co-permittee and Co-permittees are identified below.

Principal Co-permittee (VCFCD) responsibilities:

- Comply with the requirements of the Permit within its own jurisdictional boundaries (including the review of projects connected to VCFCD storm drain systems).
- Operate and maintain those storm drains owned and operated by VCFCD, including those located within the jurisdiction of the Co-permittees.
- Coordinate Permit activities (see Table 1, on page 1-23, for the schedule of Permit milestones).
- Serve as liaison between the Co-permittees and the RWQCB. This includes:
  - Set time schedules for the performance of activities.
  - Prepare regulatory reports and seek Co-permittee review.
  - Forward Co-permittee information to the RWQCB.
  - Arrange for public review, when needed.
  - Update Co-permittees on RWQCB and EPA regulations.
  - Arrange for collection and payment of Permit renewal fee.
- Secure services of consultants with concurrence of Co-permittees.
- Manage the stormwater quality monitoring program.
- Convene the Management Committee and subcommittee meetings.
- Assign Co-permittees to subcommittees.
- Attend subcommittee meetings.
- Manage the countywide educational and outreach program.

Co-permittee responsibilities:

- Comply with the requirements of the Permit within their own jurisdictional boundaries.
- Provide Permit submittals to the Principal Co-permittee.
- Prepare Permit-required submittals in the format specified by the Principal Co-permittee.
- Develop a program to address the following within its jurisdictional boundaries:
  - Implementation of controls to reduce pollution from industrial/commercial and residential areas.
  - Implementation of structural/nonstructural controls on land development and construction sites.
  - Implementation of controls to reduce pollution from maintenance activities.
  - Elimination of illegal connections and improper disposal of hazardous materials or wastes.
  - Inspection, monitoring and control programs for industrial facilities.
  - Implementation of public awareness and training programs.

VCFCD, as Principal Co-permittee, will provide the overall program management and coordination with the RWQCB. To oversee program development and provide guidance, senior staff from all Co-permittee agencies will attend a Management Committee, chaired by VCFCD. The Management Committee will review materials developed by the subcommittees, provide comments, and approve or reject program activities. Approved program materials will be distributed to all Co-permittees for their use in implementing local stormwater program activities.

Five subcommittees, composed of Co-permittee staff from various departments or contracted representatives will meet as needed to discuss program implementation activities, develop program materials, and advise and make recommendations to the Management Committee.

Each Co-permittee will serve on one or more subcommittees. Subcommittee assignments are based on city population. The subcommittees currently include the following:

- Programs for Residents
- Programs for Industrial and Commercial/Illicit Discharges (one subcommittee covers two program areas)
- Programs for Planning and Land Development
- Programs for Construction Sites
- Programs for Public Agency Activities

Because of the importance of these committees to the implementation of the SMP, performance standards will be applied to meeting attendance as follows:

- Co-permittees will be represented at 100% of all Management Committee meetings.
- Co-permittees will be represented at 100% of all assigned subcommittee meetings. The Management Committee has assigned subcommittee attendance requirements as follows:
  - Oxnard, Thousand Oaks, Ventura, Simi Valley, and Camarillo will be represented at 5 out of 5 meetings.
  - Moorpark, Santa Paula, and Fillmore will be represented at 4 out of 5 meetings.
  - Ojai and Port Hueneme will be represented at 3 out of 5 meetings.

NPDES Permit CAS004002 Requirement(s)

Findings – 10
The Co-permittees are separate legal entities and have the authority to develop, administer, implement, and enforce storm water quality management programs within their own jurisdiction. The Ventura County SMP defines certain storm water discharge requirements that apply to the Discharger, and others that apply to specific Co-permittees. Each Co-permittee is responsible for compliance with relevant portions of this permit with their jurisdiction.

Finding - 11
VCFCD is the Principal Co-permittee for permit implementation while the remaining entities, including the County of Ventura and the ten cities, are designated as Co-permittees. The following Implementation Agreement exists between the Principal Co-permittee and the Co-permittees:

As the Principal Co-permittee, VCFCD will:

a. Coordinate permit activities;

b. Establish uniform data submittal format;

c. Set time schedules;

d. Prepare regulatory reports;

e. Forward information to the Co-permittees;

f. Arrange for public review;

g. Secure services of consultants as necessary;

h. Implement activities of common interest;

i. Develop/prepare/generate all materials and data common to all Co-permittees;

j. Update Co-permittees on Regional Board and US Environmental Protection Agency (USEPA) regulations;

k. Arrange for collection and payment of annual permit renewal fee; and

l. The Principal Co-permittee shall convene all Management Committee and Subcommittee meetings.

All Co-permittees will:

a. Comply with the requirements of the permit within their own jurisdictional boundaries;

b. Prepare and provide to the Principal Co-permittee permit-required submittals;

c. Develop programs to address:

- *Implementation of controls to reduce pollution from commercial, industrial, and residential areas;*
- *Implementation of structural/non-structural controls on land development and construction sites;*
- *Implementation of controls to reduce pollution from maintenance activities;*
- *Elimination of illegal connections, including discouragement of improper disposal, encouragement of spill prevention and containment, and implementation of appropriate spill response;*
- *Inspection monitoring and control programs for industrial facilities; and,*
- *Implementation of public awareness and training programs.*

d. Co-permittees shall be represented at Management Committee Meetings;

e. There are currently five subcommittees which were developed during the first permit cycle: Residents, Businesses/Illicit Discharges, Planning and Land Development, Construction and Co-permittee Facilities Maintenance. The Management Committee will assign subcommittee attendance requirements in proportion to Co-permittee population. Co-permittees shall be represented at all assigned subcommittee meetings, and,

f. *Within its own jurisdiction, each Co-permittee is responsible for adoption and enforcement of storm water pollution prevention ordinances, implementation of self-monitoring programs and Best Management Practices (BMPs), and conducting applicable inspections. Based upon a countywide model, each Co-permittee, except the City of Simi Valley, has adopted a Storm Water quality Ordinance applicable to their jurisdiction. This is in addition to the 'Control of Water Quality, Soil, Erosion, and Sedimentation of New Agricultural Hillside Developments' adopted by the Board of Supervisors of the county of Ventura on March 20, 1984. The Principal Co-permittee is responsible for the preparation and submittal of progress and annual reports to the Regional Board.*

Annual Reporting

None Specified.

Performance Criteria

- Principal Co-permittee will fulfill the responsibilities described above.
- Co-permittees will fulfill the responsibilities described above.
- Co-permittees will be represented at 100% of the Management Committee meetings.
- Co-permittees, Oxnard, Thousand Oaks, Ventura, Simi Valley, and Camarillo will be represented at 100% of subcommittee meetings.
- Co-permittees, Moorpark, Santa Paula, and Fillmore will be represented at 80% of subcommittee meetings.
- Co-permittees, Ojai and Port Hueneme will be represented at 60% of subcommittee meetings.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

1.4 Program Structure

Program Description

The SMP was prepared and updated to be consistent with the requirements as specified in the Permit (CAS004002). The current NPDES Permit will expire on July 27, 2005. The Permit provides program requirements that will be implemented by all Co-permittees during the five-year Permit term and is organized into six Parts:

- Part 1 – Permit Requirements
- Part 2 – Receiving Water Limitations
- Part 3 – Storm Water Quality Management Plan Implementation, Monitoring, and Reporting
- Part 4 – Special Provisions
- Part 5 – Definitions
- Part 6 – Standard Provisions

These six Parts of the Permit are the basis for the SMP. The SMP is an enforceable document as referenced in the Permit. Due to the evolving nature of science and technology related to stormwater quality management, the SMP may need to be modified in the future. Modifications to the SMP may be approved by the RWQCB after providing the opportunity for public comment:

a. By petition of the Co-permittee or of interested parties, after the submittal of the Annual Monitoring Program Report. Such a petition shall be filed no later than 60 days after the Annual Monitoring Report submittal date, or

b. As deemed necessary by the RWQCB Executive Officer following notice to the Co-permittee.

Such direction may include watershed-specific requirements for watersheds shared by Ventura County and other MS4 programs. The SMP will be modified to address Total Daily Maximum Loads (TMDLs) for specific water bodies, when the request is received from the RWQCB. The typical process for modifying the SMP starts with an issued directive from the RWQCB whereby the Co-permittees will assess what changes are needed. Those changes are submitted back to the RWQCB for approval.

NPDES Permit CAS004002 Requirement(s)

IT IS HEREBY ORDERED that the Ventura County Flood Control District, the County of Ventura, and the Cities of Camarillo, Fillmore, Moorpoark, Ojai, Oxnard, Port Hueneme, San Buenaventura, Santa Paula, Simi Valley, and Thousand Oaks, in order to meet the provisions contained in Division 7 or the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act, as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

PART 1
Discharge Prohibitions

PART 2
Receiving Water Limitations

PART 3
Storm Water Quality Management Plan Implementation, Monitoring, and Reporting

PART 4
Special Provisions

The Ventura County SMP submitted by the Discharger is an integral and enforceable component of the permit.

PART 4.G.1
The Permittee shall modify the Ventura County SMP to comply with the waste load allocations developed and approved pursuant to the process for the designation and implementation of Total Daily Maximum Loads (TMDLs) for impaired water bodies

PART 5
Definitions

PART 6
Standard Provisions

Annual Reporting

Co-permittees will provide a comparison of program implementation results to performance standards established in the SMP annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will provide the status of compliance for permit requirements including implementation dates for all time-specific deadlines. If permit deadlines are not met, the Discharger shall report the reasons why the requirement was not met, how the requirements will be met in the future, and include projected implementation date as part of the *Annual Storm Water Report and Assessment*.

Co-permittees will assess the effectiveness of the SMP requirements to reduce storm water pollution. This assessment will be based upon the specific record-keeping information requirement in each major section of the permit, monitoring data, and any other data the Discharger has, or is aware of that provides information on program effectiveness. Beginning in the Year 2003, to the extent data collected in monitoring requirements included herein allows, the Discharger shall include an analysis of trends, land use contributions, pollutant source identifications, BMP effectiveness, and impacts on beneficial uses as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will provide an analysis of the data to identify areas of the Program coverage which cause or contribute to exceedances of water quality standards or objectives, predominate land uses in these areas, and potential sources of pollutants in those areas annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will discuss the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with the waste discharge requirements annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Submit the *Annual Storm Water Report and Assessment* by October 1 of each Permit year.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

1.5 Monitoring and Reporting

Program Description

The SMP includes program and reporting requirements as specified in the Permit. The Permit lists milestone-reporting requirements by program. The reporting schedule is summarized in Table 1-2 (located on page 1-24). Additionally, the Monitoring and Reporting Program, CI-7388, lists reporting requirements for each program (Part I), monitoring requirements (Part II), and program evaluation requirements (Part III). Co-permittees will collect information to fulfill the monitoring and reporting requirements listed in the SMP. The Co-permittees will provide program evaluation results reported in the standardized format, using Annual Report Forms, to the Principal Co-permittee by August 1 of each Permit year. As part of the program evaluation, Co-permittees will also provide an annual self-audit to verify the implementation of the SMP through January 1 of each Permit year. The Principal Co-permittee will provide the self-audit form for the Co-permittees to complete and return to the Principal Co-permittee by February 1 of each Permit year.

Stormwater quality monitoring and Co-permittee information will be used to generate the two reports required by the Permit. The first report is *The Storm Water Monitoring Report*. The *Storm Water Monitoring Report* will be submitted on July 15, 2001 and annually on July 15 thereafter. The report will include status of implementation of the monitoring program, results of the monitoring program; and a general interpretation of the significance of the results, to the extent that data allows, to guide future stormwater monitoring efforts.

The second report, the *Annual Storm Water Report and Assessment* covers each fiscal year from July 1 through June 30 and is due on October 1, 2001 and annually thereafter. The *Annual Storm Water Report and Assessment* includes program information necessary to assess the compliance status of the Ventura Countywide Stormwater Quality Management Program relative to the Permit and the effectiveness of implementation of Permit requirements on stormwater quality. The *Annual Storm Water Report and Assessment* incorporates a general summary of the *Storm Water Monitoring Report* to generate proposed modifications to the stormwater quality monitoring program.

NPDES Permit CAS004002 Requirement(s)

Findings – 7

The Ventura Countywide Storm Water Quality Management Program also includes the Storm Water Monitoring Plan. To date, the monitoring program has consisted of land-use based monitoring combined with receiving water monitoring and modeling. The Discharger intends to sign an agreement to participate in the Regional Monitoring Program established for Southern California municipal programs under the guidance of the Southern California Coastal Water Research Project.

PART 3.D Annual Storm Water Report and Assessment

1. The Discharger shall submit, by October 1 of each year beginning the Year 2001, An Annual Storm Water Report and Assessment documenting the status of the general program and individual tasks contained in the Ventura County SMP, as well as results of analyses from the monitoring and reporting program CI 7388. The Annual Storm Water Report and Assessment shall cover each fiscal year from July 1 through June 30, and shall include the information necessary to assess the Discharger's compliance status relative to this Order, and the effectiveness of implementation of permit requirements on storm water quality. The Annual Storm Water Report and Assessment shall include any proposed changes to the Ventura County SMP as approved by the Management Committee.

PART 3.E Storm Water Monitoring Report

1. The Discharger shall submit a Storm Water Monitoring Report on July 15, 2001 and annually on July 15 thereafter. The report shall include:

a. Status of implementation of the monitoring program as described in the attached Monitoring and Reporting Program, CI-7388.

b. Results of the monitoring program; and

c. A general interpretation of the significance of the results, to the extent that data allows.

Annual Reporting

All Co-permittees shall perform a self-audit to verify implementation of the SMP through January 1 of each year and report the results of the self-audit to the Principal Co-permittee by February 1, 2001, and annually thereafter.

All Co-permittees shall submit program evaluation results, in a standardized format, to the Principal Co-permittee by August 1, 2001, and annually thereafter.

Performance Criteria

- Submit the *Storm Water Monitoring Report* on July 15, 2001 and annually on July 15 of each Permit year.
- Submit the *Annual Storm Water Report and Assessment* by October 1, 2001 and annually on October 1 of each Permit year.
- Annually, each Co-permittee will submit a self-audit, verifying the implementation of the SMP through January 1 of each year and report the results to the Principal Co-permittee by February 1 of each Permit year.
- Annually, each Co-permittee will submit program evaluation results, in a standardized format, to the Principal Co-permittee by August 1 of each Permit year.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

1.6 Fiscal Resources

Program Description

Co-permittees will prepare an annual stormwater budget update on resources applied to the stormwater program. The budget report will include an annual update identifying the stormwater budget for the following year. Budget amounts are designated as percentages of the total budget. Co-permittees vary in size, accounting systems, and specific stormwater budgets.

Comparison of Co-permittee budget information will consider the size of the Co-permittee, ability to track detailed budgets and account for activities that may not be a part of all budgets. Estimated percentages of the budget proposed per program and written explanations will be used, as necessary, when programs may share a stormwater budget, be covered elsewhere, or have the potential for unforeseen requirements. The following nine budget reporting categories will be used, whenever possible:

1. Program management
2. Illicit connections/illicit discharge
3. Development planning/development construction
4. Construction inspection activities
5. Public Agency Activities
    - Operation and Maintenance
    - Municipal Street Sweeping
    - Fleet and Public Agency Facilities
    - Landscape and Recreational Facilities
6. Capital Costs
7. Public Information and Participation
8. Monitoring Program
9. Other

To fund program activities, Co-permittees will draw on a number of sources:

- VCFCD will use a portion of the Flood Control Benefit Assessment Program to fund its Permit activities. VCFCD is responsible for the cost of program implementation dealing with storm drains and flood control facilities it owns and operates, and the cost of Principal Co-permittee activities specified in the implementation agreement.
- Co-permittees, responsible for the cost of program implementation within their own jurisdictional boundaries, may use the Benefit Assessment Program to supplement funds from other sources.

NPDES Permit CAS004002 Requirement(s)

Findings – 6

…The Ventura County SMP is implemented by the Co-permittees with general funds, and/or Benefit Assessment Program funds.

PART 3.D.2 Storm Water Management Program Budget

a. The Discharger shall prepare annually a storm water budget update on resources applied to the storm water program. This budget report shall include an annual update identifying the storm water budget for the following year using estimated percentages and written explanations where necessary], for the specific categories noted below:

i. Program management

ii. Illicit connections/illicit discharge

iii. Development planning/development construction

iv. Construction inspection activities

v. Public Agency Activities

- *Operation and Maintenance*
- *Municipal Street Sweeping*
- *Fleet and Public Agency Facilities*
- *Landscape and Recreational Facilities*

vi. Capital Costs

vii. Public Information and Participation

viii. Monitoring Program

ix. Other

Co-permittees, in addition to the Benefit Assessment budget, shall report any supplemental dedicated budgets, if any, for the same categories.

Annual Reporting

None Specified.

Performance Criteria

- Co-permittees will update the stormwater program budget report annually as part of the *Annual Storm Water Report and Assessment*.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

1.7 Legal Authority

Program Description

The Co-permittees are separate legal entities with broad authority to develop, administer, implement, and enforce stormwater management programs within their respective jurisdictions. Although specific stormwater ordinances exist throughout the County, Co-permittees may also use legal authority derived from wastewater, solid and hazardous materials regulations, and various public nuisance ordinances to address stormwater quality issues.

Co-permittees will possess the necessary legal authority required by the Permit to prohibit non-stormwater discharges and control the contribution of pollutants to the storm drain system from stormwater discharges including, but not limited to:

- A prohibition on illicit discharges and illicit connections and a requirement for removal of illicit connections.
- A prohibition on spills, dumping, or disposal of materials other than stormwater.
- A mechanism to control, through interagency agreement, the contribution of pollutants from one portion of the municipal separate sewer system to another portion of the municipal separate storm sewer system.
- A requirement for compliance with conditions in ordinances, permits, contracts or orders.
- The ability to carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance with the Permit, including the prohibition on illicit discharges to the municipal separate storm sewer system.

In 1997, a working group of Co-permittees developed a model stormwater ordinance to specifically and cooperatively addresses stormwater quality issues. VCFCD finalized the document and made it available to all Co-permittees. A copy of the model stormwater ordinance is included as Appendix A.

With the re-issuance of the NPDES Permit, each Co-permittee will review their existing legal authority to implement the stormwater management program set forth in the Permit and the SMP, and if necessary, adopt or amend their legal authority to meet the requirements of the Permit by July, 2001. If existing legal authority is broad enough, Co-permittees may choose to implement program details by establishing policy or programs rather than modifying ordinances.

The following indicates the status of stormwater ordinance adoption.

Co-Permittee	*Adopted Date*
County of Ventura	July 22, 1997
Moorpark	December 3, 1997
Camarillo	March 25, 1998
Port Hueneme	April 1, 1998
Oxnard	April 24, 1998
Santa Paula	December 16, 1998
San Buenaventura	January 11, 1999
Ojai	February 9, 1999
Thousand Oaks	September 14, 1999
Fillmore	December 27, 1998
Simi Valley	July 23, 2001

NPDES Permit CAS004002 Requirement(s)

PART 3.C Legal Authority

1. *Co-permittees shall possess the necessary legal authority to prohibit non-storm water discharges and control the contribution of pollutants to the storm drain system from storm water discharges, including, but not limited to:*

    a. *A prohibition on illicit discharges and illicit connections and a requirement for removal of illicit connections;*

        i. *Prohibit the discharge of wash waters to the MS4 when gas stations, auto repair garages, or other types of automotive service facilities are cleaned;*

        ii. *Prohibit the discharge of runoff to the MS4 from mobile auto washing, steam cleaning, mobile carpet cleaning, and other such mobile commercial and industrial operations;*

        iii. *Prohibit the discharges of runoff to the MS4 from areas where, repair of machinery and equipment which are visibly leaking oil, fluid or antifreeze, is undertaken;*

        iv. *Prohibit the discharge of runoff to the MS4 from storage areas of materials, containing grease, oil, or other hazardous substances, and uncovered receptacles containing hazardous materials;*

        v. *Prohibit the discharge of chlorinated swimming pool water and filter backwash to the MS4;*

vi. Prohibit the discharge of untreated runoff from the washing of toxic materials from paved or unpaved areas to the MS4;

vii. Prohibit washing impervious surfaces in industrial/commercial areas which results in a discharge of untreated runoff to the MS4, unless specifically required by State or local health and safety codes; and

viii. Prohibit the discharge from washing out of concrete trucks, pumps, tools, and equipment to the MS4.

b. A prohibition on spills, dumping, or disposal of materials other than storm water;

i. Litter, landscape debris and construction debris;

ii. Any state or federally banned pesticide, fungicide or herbicide;

iii. Food wastes; and

iv. Fuel and chemical wastes, animal wastes, garbage, batteries, and other materials which have potential adverse impacts on water quality.

c. A mechanism to control, through interagency agreement, the contribution of pollutants from one portion of the MS4 to another portion of the MS4;

d. A requirement for compliance with conditions in ordinances, permits, contracts or orders; and,

e. The ability to carry out all inspections, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions, including the prohibition on illicit discharges to the MS4.

f. Each Co-permittee shall adopt, no later than July 27, 2001, an agency-specific storm water and urban runoff ordinance or amend an existing one if necessary, based on the countywide model (Appendix A of the Ventura County SMP) to be able to enforce all requirements of the permit.

Annual Reporting

None Specified.

Performance Criteria

- Each Co-permittee will review their existing legal authority to implement the stormwater management plan set forth in the Permit and the SMP, and if necessary, adopt or amend their legal authority to meet the requirements of the Permit by July 27, 2001.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

Section 2
Residents

2.1 Overview

This section discusses the following programs for residents:

- Public Reporting
- Stencil Program
- Education and Outreach Program

2.2 Public Reporting

Program Description

Each Co-permittee will identify staff that is to serve as the contact(s) person for public reporting in their jurisdiction. Identification of staff will be complete within six (6) months of Permit issuance (January 27, 2001) and updated as necessary. Updates or confirmation of contact person(s) will be included in the *Annual Storm Water Report and Assessment*, as well as listed on the Ventura Countywide Stormwater Program website (www.vcstormwater.org).

In addition, the telephone number of contact staff will be publicized, by each Co-permittee independently and collectively through countywide projects. Publication of contact information will include listing in the government pages of the phone book, which will clarify to residents how to reach or be directed to the appropriate party.

Designated contact staff will be provided with relevant stormwater quality information. This will include current resident program activities, preventative stormwater pollution control information and contact information for responding to illicit discharge/illegal dumping activities.

Current contact information is listed below:

Public Reporting Contact Information	
Principal Co-permittee	
Ventura County Flood Control District	805.654.3179
Co-permittees	
City of Camarillo	805.388.5380
County of Ventura	805.654.3179
City of Fillmore	805.524.3701
City of Moorpark	805.529.6864
City of Ojai	805.646.5581
City of Oxnard	805.488.3517
City of Port Hueneme	805.986.6564
City of San Buenaventura	805.652.4515
City of Santa Paula	805.933.4212
City of Simi Valley	805.583.6462
City of Thousand Oaks	805.449.2400

NPDES Permit CAS004002 Requirement(s)

PART 4.A.1:
Co-permittees shall identify staff who will serve as the public reporting contact person(s) for reporting clogged catch basin inlets and illicit discharges/dumping, and general storm water management information within 6 months of permit issuance, and thereafter include this information, updated when necessary, in public information, the government pages of the telephone book and the Annual Report as they are developed/published.

The designated contact staff will be provided with relevant storm water quality information including current resident program activities, preventative stormwater pollution control information and contact information for responding to illicit discharges/illegal dumping.

Annual Reporting

Co-permittees will update program contact information as defined above in outreach materials, the government pages of the telephone book (as they are developed/published) and annually as part of the *Annual Storm Water Report and Assessment*.

Performance Criteria

- Co-permittees will report to the Principal Co-permittee relevant program contact information as defined above by January 27, 2001 and update the information as needed. This information will be available in outreach materials, the government pages of the telephone book (as they are developed/published), and the Program's website.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

2.3 Stencil Program

Program Description

Each Co-permittee will clearly mark storm drain inlets within their jurisdiction with a legible and visible "no dumping" message. This message is intended to inform and educate the public that the storm drain systems flow to the ocean and that contaminated stormwater receives no treatment prior to discharge. The message will consist of a brief, single-line phrase using prohibitive language that clearly discourages illegal dumping. Once labeled, drain inlets will be maintained and re-label when necessary.

In addition, Co-permittees will post signs with prohibitive language to discourage illegal dumping at designated public access point to creeks and other relevant water bodies by July 27, 2002. Posted signs will be maintained and replaced as needed.

NPDES Permit CAS004002 Requirement(s)

PART 4.A.2:
Co-permittees shall mark storm drain inlets with a legible "no dumping" message. In addition, signs with prohibitive language discouraging illegal dumping must be posted at designated public access points to creeks, other relevant water bodies, and channels by July 27, 2002.

Annual Reporting

Co-permittees will provide the number and percentage of the total system of storm drain inlets marked with a "no dumping" message annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will mark and maintain 90% of the storm drains with a "no dumping" message.
- Co-permittees will post and maintain signs with prohibitive language discouraging illegal dumping at 90% of the designated public access points to creeks and channels by July 27, 2002.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

2.4 Education and Outreach Program

Program Description

Each Co-permittee will organize outreach events, training and other activities on stormwater quality within their jurisdiction. Co-permittees will emphasize the importance of using environmentally safe practices at home and work to prevent stormwater pollution. Outreach efforts will include one-on-one, small group learning activities, and other media to deliver a stormwater message that educates and informs the public.

Co-permittee utilize a variety of outreach methods, including:

- Presentations at schools, community groups, etc.
- Contests
- Staffed and non-staffed displays
- Newspaper articles/advertisements
- Brochures
- Utility bill inserts/mailers
- Countywide stormwater website (www.vcstormwater.org)
- Movie/slide presentations
- Television/Radio announcements

For countywide events, the Principal Co-permittee will coordinate Co-permittees' efforts and provide the Co-permittees with information on staffing and supply needs. The Ventura County Fair is an example of a countywide event where the Principal Co-permittee schedules Co-permittee staffing levels as required for effective distribution of educational material and personal contact.

Collectively, the Co-permittees will reach a minimum of 2.1 million contacts per permit year. These contacts will provide the public with information about stormwater quality management by utilizing published material, local TV and radio, and other appropriate media or methods listed above.

NPDES Permit CAS004002 Requirement(s)

PART 4.A.3:
Conduct educational activities within each Co-permittee jurisdiction and participate in countywide events.

PART 4.A.4:
Each Co-permittee shall distribute outreach materials to the general public and school children at appropriate public counters and events. Outreach material shall include information such as proper disposal of litter, green waste, pet waste, proper vehicle maintenance, lawn care, and water conservation practices.

PART 4.A.5:
The Discharge shall insure a minimum of 2.1 million impressions per year are made on the general public about stormwater quality via print, local TV access, local radio, or other appropriate media.

Annual Reporting

Co-permittees will provide a description of program activities including: distributing brochures; community outreach efforts; public communication efforts; and educational programs in schools annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will provide the number of impressions per year made on the general public about storm water quality via print, local TV and radio, and meetings or other appropriate media annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Each Co-permittee will conduct educational activities within its jurisdiction and participate in countywide events.
- Each Co-permittee shall distribute outreach material that includes information such as, the proper disposal of litter, green waste, and pet waste, proper vehicle maintenance, and lawn care practices. In addition, outreach materials will emphasize water conservation methods and practices.
- Collectively, the Co-permittees will make a minimum of 2.1 million contacts per Permit year using the media types listed above.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

Section 3
Industrial/Commercial Businesses

3.1 Overview

This section discusses the following programs for industrial and commercial businesses:

- Site Education/Inspection
- Targeted Businesses/POCs
- General Industrial Permit Facility Visits
- Stormwater Quality Staff Training

3.2 Site Education/Inspection

Program Description

Co-permittees will implement an educational site inspection program for industrial and commercial businesses within their jurisdictions. Automotive and food service facilities will be visited once every two years. During site visits, Co-permittees will:

- Consult with a representative of the facility to explain applicable stormwater regulations;
- Distribute and discuss applicable BMP and educational materials; and
- Conduct a site walk-through to inspect for, at a minimum, evidence of illicit discharges, prevention BMPs, and stormwater quality management education programs for employees.

Inspection staff shall meet with the business owner, manager, or designated responsible individual to review the objectives of the inspection, and then walk through the facility. Inspection results shall then be discussed with the business owner or manager. Suggested BMPs are included as Appendix B (Appendices are provided as guidance that may be updated as needed).

Businesses will be scheduled for a follow-up visit whenever evidence of an illicit discharge is found, within six months of the inspection. If during the follow-up inspection evidence still indicates non-compliance, another revisit may be scheduled or enforcement actions may be initiated. Enforcement actions including Notice of Violations (NOVs), Cease and Desist Orders, Administrative Civil Liability actions, and monetary fines, will be used when no action is observed to address, resolve or remove the illicit discharge. As each Co-permittee has adopted their own version of the model ordinance, they have included enforcement provisions to facilitate the site education/inspection program and foster permit compliance.

Co-permittees will develop a database of inspected automotive and food service facilities that includes; facility name, site address, applicable SIC code(s), and NPDES storm water permit coverage. This database will be submitted to the RWQCB and updated annually.

NPDES Permit CAS004002 Requirement(s)

PART 4.B.1
Each Co-permittee shall implement an industrial/commercial educational site inspection program.

PART 4.B.2
Co-permittees shall inspect automotive service and food service facilities in its jurisdiction once every two years. During site visits, Co-permittees shall:

a. Consult with a representative of the facility to explain applicable storm water regulations;

b. Distribute and discuss applicable BMP and educational materials; and

c. Conduct a site visit walk-through to inspect for, at a minimum, evidence of illicit discharges and storm water educational programs for employees

PART 4.B.3
Co-permittees shall revisit automotive and food service facilities where evidence of illicit discharges is found within six months of the inspection. If necessary, Co-permittees will begin enforcement action to remove sources of illicit discharges.

PART 4.B.6
Co-permittees shall provide an annual update of the inspected automotive service, food service … facilities to this Regional Board in the annual report. The database shall include at a minimum; facility name, site address, applicable SIC code(s), and NPDES storm water permit coverage.

Annual Reporting

Co-permittees shall provide the number of automotive and food service facilities targeted, the number of visits conducted, and the number of outreach contacts made annually as part of the *Annual Storm Water Report and Assessment*.

Co-permittees will develop a database of inspected automotive, and food service facilities which includes the facility name, site address, applicable SIC(s) and NPDES storm water permit coverage by July 27, 2002. This database will be updated annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Each Co-permittee will conduct site education/inspections of 90% of automotive, food service, and other targeted businesses in their jurisdiction every two years.
- Businesses will be scheduled for a follow-up visit whenever evidence of an illicit discharge is found, within six months of the education site inspection.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

3.3 Targeted Businesses/POCs

Program Description

Co-permittees will target additional businesses based on Pollutants of Concern (POCs) for inclusion in the site education/inspection program. Co-permittees may contact these targeted businesses in a manner appropriate to the type of business. Co-permittees shall provide appropriate educational outreach materials.

NPDES Permit CAS004002 Requirement(s)

PART 4.B.4
Based on Pollutants of Concern source identification, additional target businesses may be identified to be included in the inspection program. Co-permittees shall report on the types and proposed actions to be taken in regard to the additional target businesses in annual reports.

PART 4.B.6
Co-permittees shall provide an annual update of …other targeted facilities to this Regional Board in the annual report. The database shall include at a minimum; facility name, site address, applicable SIC code(s), and NPDES storm water permit coverage.

Annual Reporting

Co-permittees will report the types and proposed actions taken in regard to businesses targeted based on POCs annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will develop a database of targeted facilities, which includes the facility name, site address, applicable SIC(s) and NPDES storm water permit coverage by July 27, 2002. This database will be updated annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will target additional businesses based on POCs as appropriate.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

3.4 General Industrial Permit Facility Visits

Program Description

Co-permittees will attempt to identify facilities subject to the State General Industrial Activities NPDES Permit (General Industrial Permit) in their respective jurisdiction. Resources that co-permittees may use to facilitate identifying Phase I industries include:

- State Water Resources Control Board (SWRCB) database of facilities covered by the General Industrial Permit
- Hazardous materials inventories maintained by fire or environmental health departments
- Lists of facilities subject to local wastewater utility's industrial pretreatment program
- City business license records
- Commercially available business listings (e.g., the Dun & Bradstreet database)
- Telephone book business listings
- Non-filers database
- Letters/Use surveys/Mailer with response requested/checklist, etc.

Once facilities are identified, the Co-permittees will visit the targeted facilities by July 27, 2002. During site visits the Co-permittees will complete a site visit checklist developed by the Principal Co-permittee and approved by the RWQCB. The checklist is provided in Appendix B as guidance. This checklist is for guidance only and may be modified by the Co-permittees as needed to incorporate with pre-existing inspection programs. The checklist will indicate the facility name, site address, applicable SIC code(s), whether or not a SWPPP was on site, indication as to whether or not a NOI was submitted, and confirm that educational materials were distributed.

Co-permittees will distribute stormwater pollution prevention information every two years to identified industrial businesses subject to the General Industrial Permit. Educational materials and BMP handouts will be adapted from the *NPDES Storm Water Multi-Sector General Permit for Industrial Activities* (USEPA, 1995). The information will be provided as guidance to help facility owners develop their own programs to reduce potential pollutants to the storm drain system and receiving waters.

Educational materials will include the following specific requirements of the General Industrial Permit:

- Facilities subject to the General Industrial Permit must file an Notice of Intent (NOI) with the State Board
- A Storm Water Pollution Prevention Plan (SWPPP) must be available on site

Educational materials will also include information describing illicit discharges. Emphasis will be placed on prohibited discharges, preventative methods for illicit discharges, what to do in the event of an illicit discharge, and penalties that can be assessed for non-compliance.

Co-permittees who determine that a facility may not be in compliance with the General Industrial Permit may choose to refer a facility to the RWQCB for further action. Follow-up inspections and enforcement of the General Industrial Permit will be accomplished by the permitting agency, the State or the RWQCB.

Co-permittees will develop a database of businesses identified as Phase I industrial facilities that includes; facility name, site address, applicable SIC code(s), and NPDES storm water permit coverage, if applicable. This database will be updated annually or as needed.

NPDES Permit CAS004002 Requirement(s)

PART 4.B.5

No later than July 27, 2002, each Co-permittee shall conduct a site visit and complete a site visit checklist provided by the Regional Board, and distribute educational program materials to facilities identified as subject to the State Board General Industrial Permit. Thereafter, material will be redistributed once every two years. These industrial facilities shall be notified of specific requirements contained in the Statewide Industrial General Permit including: that such facilities must file a Notice of Intent (NOI) with the State Board, and that a Storm Water Pollution Prevention Plan (SWPPP) must be available on the site. Educational materials shall also include information describing illicit discharges. The information shall include: types of discharges prohibited, how to prevent illicit discharges, what to do in the event of an illicit discharge, and the array of enforcement actions the facility may be subject to, including penalties that can be assessed. The Co-permittee shall note on the site-visit checklist if an NOI has been submitted and if a SWPPP is available on site.

PART 4.B6

Co-permittees shall provide an annual update of … facilities identified as Phase I industrial facilities to this Regional Board in the annual report. The database shall include at a minimum; facility name, site address, applicable SIC code(s), and NPDES storm water permit coverage.

Annual Reporting

Co-permittees shall provide the number of industrial facilities potentially subject to the General Industrial Permit, the number of visits conducted, the number of outreach contacts made, and the number of facilities that have failed to file a Notice of Intent (NOI) annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will develop a database of businesses identified as Phase I industrial facilities, and include the facility name, site address, applicable SIC(s) and NPDES storm water permit coverage by July 27, 2002. This database will be updated annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will distribute educational materials to 90% of facilities identified as potentially subject to the General Industrial Permit and perform site visits as locally determined necessary to complete a checklist. The checklist will list the SIC code of the industrial users, indicate whether an identified site has obtained coverage under the State General Industrial Permit, and if a SWPPP is available on site.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

3.5 Stormwater Quality Staff Training

Program Description

Each Co-permittee will identify inspection staff and other personnel based on the type of stormwater quality and pollution issues that they may encounter during the performance of their regular inspections or daily activities. Training may target staff members who perform inspection activities as part of the HAZMAT, Environmental Health, and Wastewater Pretreatment Programs as well as staff who may respond to questions from the public or industrial/commercial businesses.

Staff will be trained in a manner that will provide adequate knowledge for effective business inspections, enforcement, and answering questions from the public or industrial/commercial operators who contact Co-permittees. Training may consist of informal "tailgate" meetings, formal classroom training, or self-guided training methods. All employees in targeted positions shall be trained regarding the requirements of the storm water quality management program by January 27, 2001 and annually thereafter.

Co-permittee industrial/commercial staff training will include appropriate information on the prevention, detection, and investigation of illicit discharges and illegal connections (ID/IC). See Section 7 for more information regarding ID/IC training.

NPDES Permit CAS004002 Requirement(s)

PART 4.B.7
Co-permittees shall train their employees in targeted positions (whose jobs or activities directly affect storm water quality, or those who respond to questions from the public), including inspection staff, regarding the requirements of the storm water management program by January 27, 2001, and annually thereafter.

Annual Reporting

Co-permittees will provide the percentage of targeted staff trained annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will train 90% of targeted employees by January 27, 2001 and annually thereafter.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

Section 4
Planning and Land Development

4.1 Overview

This section discusses the following programs for planning and land development:

- Land Use Planning and Environmental Review
- Development Standards – Technical Manual
- Environmentally Sensitive Areas
- Development Community Outreach
- Stormwater Quality Staff Training

4.2 Land Use Planning and Environmental Review

4.2.1 Project Review and Conditioning

Program Description

Development and redevelopment projects can potentially discharge pollutants to stormwater. By recognizing this potential and addressing it throughout the development process, these impacts can be controlled. Co-permittees approach stormwater concerns early in the project development process when the options of pollution control are greatest and the cost to incorporate these controls into new development and redevelopment projects are least.

Co-permittees will implement the Stormwater Quality Urban Impact Mitigation Plan (SQUIMP) for new private development projects that fall into one or more of the following categories:

- Single-family hillside residences;
- 100,000 square foot commercial development;
- Automotive repair shops;
- Retail gasoline outlets;
- Restaurants;
- Home subdivisions with 10 or more housing units;
- Locations within, or directly adjacent to or discharging to a SQUIMP Environmentally Sensitive Area; and,
- Parking lots of 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to stormwater runoff.

Private redevelopment projects that result in the creation or addition of 5,000 square feet or more of impervious surfaces are subject to the requirements of the SQUIMP. If a redevelopment project creates or adds 50% or more impervious surface area to the existing impervious surfaces, then stormwater runoff from the entire area (existing and additions) must be conditioned for stormwater quality mitigation. Otherwise, only the additional area of redevelopment project requires mitigation.

The SQUIMP lists the minimum required Best Management Practices (BMPs) that must be implemented for new private development and private redevelopment projects subject to SQUIMP.

The minimum requirements include the following BMPs:

- Control peak stormwater runoff discharge rates;
- Conserve natural areas;
- Minimize stormwater pollutants of concern;

- Protect slopes and channels;
- Provide storm drain stenciling and signage;
- Properly design outdoor material storage areas;
- Properly design trash storage areas;
- Provide proof of ongoing BMP maintenance;
- Meet design standards for structural or treatment control BMPs; and
- Comply with provisions applicable to individual priority project categories, which include the following:
    - 100,000 square foot commercial developments;
    - Restaurants;
    - Retail gasoline outlets;
    - Automotive repair shops; and
    - Parking lots.

The SQUIMP provides a Co-permittee, through adoption of an ordinance or code incorporating requirements of the SQUIMP, the ability to provide a waiver from SQUIMP requirement(s) if impracticability for a specific property can be established. This waiver may only be granted when all other structural or treatment control BMPs have been considered and rejected as infeasible. Details on the specific requirements for granting waivers are included in the SQUIMP.

The SQUIMP also contains provisions that provide suggested limitations and restrictions on infiltration BMPs. Areas identified in Ventura County where the application of infiltration BMPs should be limited are identified on a map contained in the SQUIMP. Use of infiltration BMPs in those identified areas should provide pretreatment to ensure groundwater protection from pollutants of concern.

During the development review process, the Co-permittees will identify development and redevelopment projects that fall into one or more of the categories covered in the SQUIMP. These projects will be conditioned to comply with all applicable provisions of the SQUIMP. Examples of project conditions are contained in Appendix C. These example conditions are for guidance only and may be modified by the Principal Co-permittee as needed to implement the requirements of the SQUIMP and the SMP, Land Use Planning and Development Program. Co-permittees are encouraged to identify applicable projects early, so that projects can be conditioned when the options for incorporation of SQUIMP requirements are greatest and the cost are least. This is also a good opportunity to conduct educational outreach to project participants regarding the requirements of the Program for Planning and Land Development (see Section 4.5).

In addition to complying with the requirements in the SQUIMP, projects should be conditioned to comply with the Ventura Countywide Stormwater Quality Management Program Land Development Guidelines and the SMP Construction Program (see Section 5). The Development Guidelines are contained in Appendix C. These guidelines may be modified by the Principal Co-permittee as needed to implement the requirements of the SQUIMP and the SMP.

Water quality control BMPs must be adequately maintained if they are to provide long-term water quality protection. Co-permittees will condition projects subject to the SQUIMP to develop and implement a long-term operation and maintenance plan for water quality protection BMPs included in the project.

The operation and maintenance plans will contain:

- Operation procedures
- Procedures for routine maintenance (such as debris removal, vegetation clearing, maintenance frequency);
- Procedures for corrective maintenance (such as parts replacement);
- Maintenance performance levels;
- Identification of the party responsible for operation and maintenance; and
- Inspection and reporting requirements.

When a non-public agency (e.g., the landowner, homeowners' associations, etc.) is responsible for the long-term operation and maintenance, the Co-permittees will require formal designations of responsibility. This can be done through deed restrictions or other formal mechanisms that inform all future owners of the requirements for the continuous operation and maintenance of the stormwater quality control BMPs on site. All operation and maintenance plans will include a written and executed statement from the responsible party accepting operation and maintenance responsibilities.

After a project is initially conditioned, Co-permittees will need to verify in subsequent project reviews that stormwater quality protection conditions are being adequately incorporated. In lieu of conducting detailed reviews of BMP designs, the Co-permittees may accept a certification from a Civil Engineer or a licensed Architect registered in California, that the plan meets the requirements of this program. Details on the certification process are included in the SQUIMP.

Once it has been determined, through detailed review or by certification, that a project will fully comply with stormwater quality protection conditions required by this program, the project may be deemed complete for further processing. Issuance of building and grading permits will not occur until full compliance is achieved.

4.2.2 Environmental Review

Program Description

The California Environmental Quality Act (CEQA) sets forth requirements for the processing and environmental review of many projects. CEQA processing and review provide excellent opportunities to address stormwater quality issues related to proposed projects early in the planning stages. The National Environmental Quality Act (NEPA) comes into play less often than CEQA, but may surface on projects involving Federal funding. Like CEQA, NEPA processing and review provide excellent opportunities to address stormwater quality issues related to proposed projects early in the planning stages.

Each Co-permittee will review their internal planning procedures for preparing and reviewing CEQA (and NEPA when applicable) documents, and for linking stormwater quality mitigation conditions (including those required to protect sensitive areas) to legal discretionary project approvals. If necessary to comply with the requirements of the SMP, the Land Use Planning and Development Program, or the Permit, the Co-permittee will make appropriate revisions to the procedures.

The Co-permittees will consider stormwater quality issues during processing of environmental checklists, initial studies, or environmental impact reports required by CEQA, and during processing of similar documents where NEPA applies. This process will include consideration of SQUIMP Environmentally Sensitive Areas based on state designations no later than January 27, 2001, and based on the list developed by the Principal Co-permittee no later than July 27, 2001.

4.2.3 General Plan Revisions

Program Description

The Co-permittees' General Plans provide the foundation and the framework for land use planning and development. Therefore, the General Plans reflect overall policies for protection of stormwater quality.

Each Co-permittee will include watershed and stormwater management considerations in the appropriate elements of their General Plans whenever these elements are significantly rewritten.

NPDES Permit CAS004002 Requirement(s)

PART 4.C.1
The Discharger shall implement the approved Ventura Countywide Stormwater Quality Urban Impact Mitigation Plan (SQUIMP) (Attachment A) no later than January 27, 2001. The SQUIMP shall address conditions and requirements for new development and significant redevelopment. At a minimum, appropriate elements of the SQUIMP will be included as project requirements for the following development categories:

a. Single-family hillside residences;

b. 100,000 square foot commercial developments;

c. Automotive repair shops;

d. Retail gasoline outlets;

e. Restaurants;

f. Home subdivisions with 10 or more housing units;

g. Locations within, or directly adjacent to or discharging directly to an environmentally sensitive area; and,

h. Parking lots of 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff.

PART 4.C.4
Co-permittees shall make appropriate modifications to their internal planning procedures for preparing/reviewing CEQA documents, and for linking storm water quality mitigation conditions to legal discretionary project approvals.

PART 4.C.6
The Permittee shall include watershed and storm water management considerations in the appropriate elements of the Permittee's General Plan whenever said elements are significantly rewritten. Appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation of and integration with natural features, and water conservation policies.

Board Order No. 00-108 Stormwater Quality Urban Impact Mitigation Plan

…This SQUIMP contains a list of the minimum required Best Management Practices (BMPs) that shall be used for a designated project. Additional BMPs may be required by ordinance or code adopted by the Co-permittees and applied generally or on a case by case basis. The Co-permittees are required to implement the requirements set herein in their own jurisdictions. Developers shall incorporate appropriate SQUIMP requirements into the project plans for the projects covered by the SQUIMP requirements. Each Co-permittee will approve the project plan as part of the development plan approval process.

All projects that fall into one of eight categories are identified in the Ventura Countywide Municipal Permit are requiring SQUIMPs.

These categories are:

a. Single-Family Hillside Residences
b. 100,000 Square Foot Commercial Developments
c. Automotive Repair Shops
d. Retail Gasoline Outlets
e. Restaurants
f. Home subdivisions with 10 or more housing units
g. Location within or directly adjacent to or discharging directly to an environmentally sensitive area
h. Parking lots with 5,000 square feet or more impervious parking or access surfaces or with 25 or more parking spaces and potentially exposed to storm water runoff

The SQUIMP requirements shall take effect not later than January 27, 2001 for projects identified herein that have not received development/ planning permit approval or been deemed complete for processing prior to July 27, 2000.

SQUIMP PROVISIONS APPLICABLE TO ALL CATEGORIES:

1. *[Control] Peak Storm Water Runoff Discharge Rates…*
2. *Conserve Natural Areas…*
3. *Minimize Storm Water Pollutants of Concern…*
4. *Protect Slopes and Channels…*
5. *Provide Storm Drain Stenciling and Signage…*
6. *Properly Design Outdoor Material Storage Areas…*
7. *Properly Design Trash Storage Areas…*
8. *Provide Proof of Ongoing BMP Maintenance…*
9. *[Meet] Design Standards for Structural or Treatment Control BMPs*
10. *[Comply with] Provision Applicable to Individual Priority Project Categories…*
11. *[Comply with Provision for] Waiver[s]*
12. *[Comply with] Limitation on Use of Infiltration BMPs*
13. *[Comply with Provisions for] Alternative Certification for Storm Water Treatment Mitigation*

Annual Reporting

Co-permittees will provide the percentage of the total development projects reviewed for storm water and conditioned to meet SQUIMP requirements annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will provide the scheduled date of a significant rewrite of the Co-permittees' General Plan annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will review 90% of all private development and redevelopment projects, falling into one or more of the categories specified above and condition these projects to comply with appropriate elements of the SQUIMP. Projects that received development planning permit approvals or were deemed complete for processing prior to July 27, 2000 do not need to be conditioned to comply with the SQUIMP.
- Each Co-permittee shall review internal planning procedures for preparing and reviewing CEQA documents and for linking stormwater quality mitigation conditions (including those required to protect SQUIMP Environmentally Sensitive Areas) to legal discretionary project approvals.
- If necessary to comply with the requirements of the SMP, or the Permit, planning procedures shall be modified.
- Co-permittees will consider stormwater quality during processing of environmental checklists, initial studies, or environmental impact reports required by CEQA, and during processing of similar documents where NEPA applies.
- Co-permittees will include watershed and stormwater management considerations in the appropriate elements of the Co-permittee's General Plan whenever these elements are significantly rewritten.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

4.3 Development Standards – Technical Manual

Program Description

Protection of water quality requires that Best Management Practices (BMPs) be designed in accordance with criteria sufficient to meet the requirements of the stormwater quality management program, without causing collateral, negative impacts elsewhere in the environment. In addition, the science and technology of stormwater quality management continues to evolve. Therefore, it is necessary to develop BMP design criteria and then to periodically update the criteria to reflect the current state of knowledge and available technologies.

The Principal Co-permittee will prepare a technical manual by July 27, 2002, which includes the following:

- Specifications for treatment control BMPs and structural BMPs based on the flow-based and volume-based water quality design criteria in the SQUIMP;
- Criteria that can be implemented consistently throughout the permit area; and
- Criteria for the control of discharge rates and duration for the purposes of maintaining or reducing pre-development downstream erosion, and for protecting stream habitat.

The technical manual will be consistent with and no less stringent than the design criteria in the SQUIMP, and will be submitted to the RWQCB Executive Officer for approval.

NPDES Permit CAS004002 Requirement(s)

PART 4.C.2
The Discharger shall no later than July 27, 2002, prepare a technical manual, which shall include:

a. specifications for treatment control BMPs and structural BMPs based on the flow-based and volume-based water quality design criteria for the purposes of countywide consistency, and

b. criteria for the control of discharge rates and duration.

Notwithstanding the requirement that the BMP design criteria be incorporated into a technical manual, the criteria shall be effective as of July 27, 2000. The technical manual criteria shall be consistent with, and must not be less stringent than the design criteria in the SQUIMP, and shall be subject to approval by the Regional Board Executive Officer.

Annual Reporting

None Specified.

Performance Criteria

- The Principal Co-permittee will prepare the technical manual specified above and submit it to the RWQCB Executive Officer for approval by July 27, 2002.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

4.4 Environmentally Sensitive Areas

Program Description

Some areas, due to their plant or animal life or their habitats, could be degraded by water quality changes caused by human activities, and may require special consideration in the SMP, Land Use Planning and Development Program. For the purposes of the SMP, the SQUIMP, and the Permit, these areas are referred to as Environmentally Sensitive Areas (ESA).

The Co-permittees shall consider ESAs in the development planning and conditioning process in accordance with the following schedule:

- State ESAs will be considered as of January 27, 2001
- ESAs defined in this section will be considered as of July 27, 2001

The Principal Co-permittee developed the following description to identify ESAs. This description in included in the SMP to comply with permit requirements to identify ESAs by January 27, 2001, and is suitable for use in the Land Use Planning and Development Program and the conditioning of projects for the application of SQUIMP requirements.

ESAs are defined as follows:

Areas of Special Biological Significance (ASBS) by the State Water Resources Control Board, areas designated as a significant natural resource by the California Resources Agency, and the bed and banks of 303(d) listed waters (map on page 4-12) that are also unimproved channels. Projects that are exempt from this definition include:

- Single Family Residences (except those that meet Permit definition of Hillside Residences)
- Commercial developments less than 100,000 square feet except:
    - Automotive repair shops;
    - Retail Gasoline Outlets; and
    - Restaurants, where the land area available for development or redevelopment is greater than 5000 sq. ft.
- Parking lots with less than 5000 sq. ft. of impervious surface or with less than 25 parking spaces that are exposed to stormwater runoff;
- Home subdivisions with less than 10 housing units; and
- Any project that does not have the potential to discharge any listed pollutant/stressor of the 303(d) listed waterbody.

The Principal Co-permittee may provide narrative or graphical depictions of ESAs to the Co-permittees to aid in their application of the ESA definition, if determined by the Principal Co-permittee to be needed or necessary.

NPDES Permit CAS004002 Requirement(s)

PART 4.C.3.
The Discharger shall identify no later than January 27, 2001, specific environmentally sensitive areas in Ventura County for the application of SQUIMP requirements, based on the Regional Board's Basin Plan and CWA Section 303 (d) Impaired Water-bodies List, and submit the list to the Regional Board Executive Officer for approval. Once approved, this list will supplement the state designations included in the definition of "Environmentally Sensitive Areas".

PART 4.H.2.
Requirements for new development and significant redevelopment in environmentally sensitive areas shall be incorporated into enforceable documents such as land development guidelines and city ordinances no later than July 27, 2001.

a. Requirements of the SQUIMP as they relate to the supplemental list of "Environmentally Sensitive Areas" identified based on the Regional Board's Basin Plan and the CWA Section 303 (d) Impaired Water-bodies List shall take effect no later than July 27, 2001.

b. Requirements of the Stormwater Quality Urban Impact Mitigation Plan for state designations of "Environmentally Sensitive Areas" shall take effect no later than January 27, 2001.

Annual Reporting

None Specified.

Performance Criteria

- ESAs were to be identified by January 27, 2001, and the requirements for new development and redevelopment in ESAs were to be included in land development guidelines and ordinances. The Principal Co-permittee submitted the above ESA definition to the RWQCB by the permit required date. However, due to the significance of ESAs and the RWQCB's desire for additional clarification and delineation of ESAs, further action on an ESA definition has been delayed until the L.A. Permit is re-issued and the definition of an ESA is clarified.
- Each Co-permittee shall review internal planning procedures for preparing and reviewing CEQA documents and for linking stormwater quality mitigation conditions (including those required to protect Environmentally Sensitive Areas) to legal discretionary project approvals. If necessary to comply with the requirements of SMP or the Permit, the planning procedures shall be modified. Consideration of Environmentally Sensitive Areas based on state designations shall take effect no later than January 27, 2001, and based on the ESA definition provided in this section no later than July 27, 2001. However, due to the significance of ESAs and the RWQCB's desire for additional clarification and delineation of ESAs, further action on an ESA definition has been delayed until the L.A. Permit is re-issued and the definition of an ESA is clarified.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

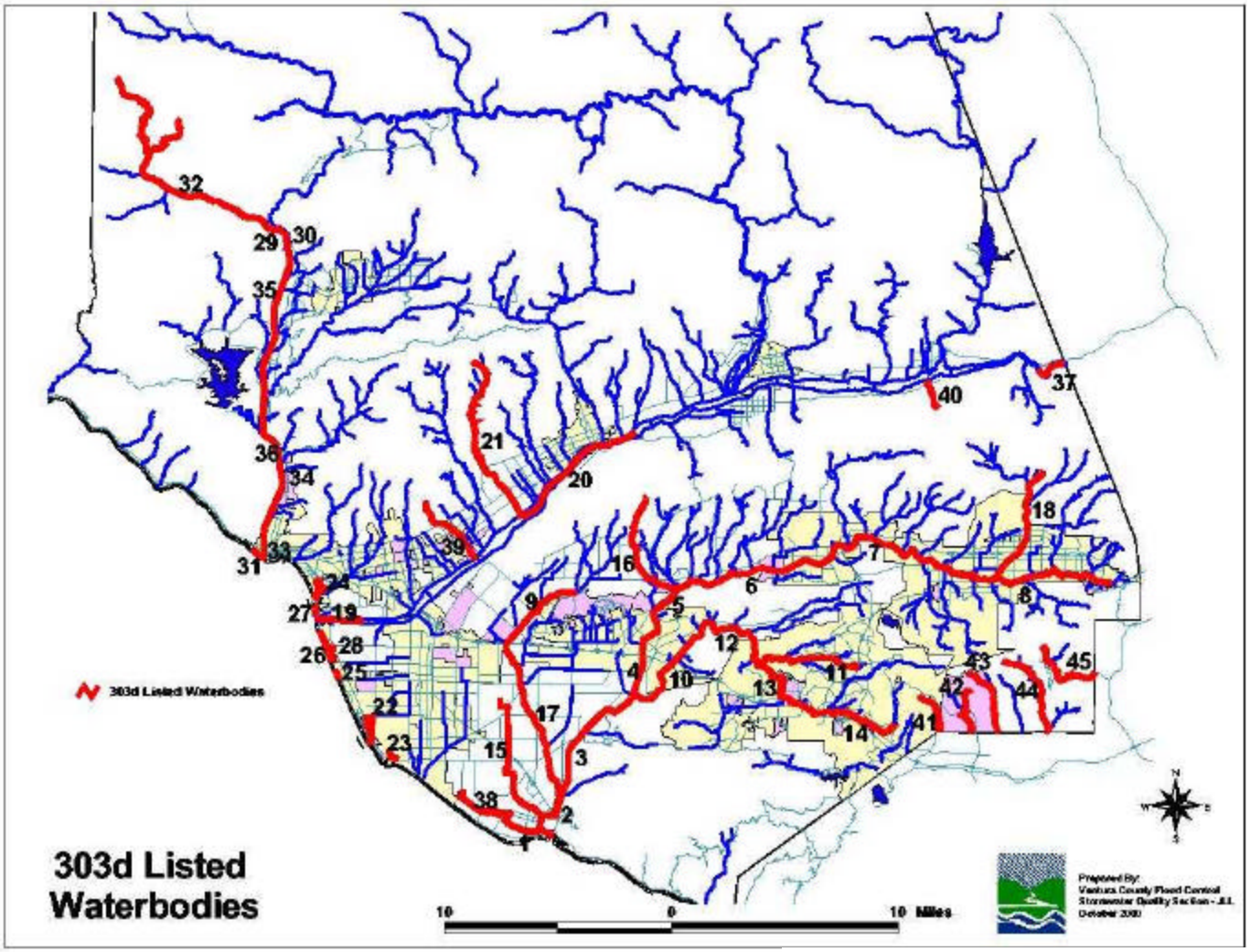

Figure 4-1
303d Listed Waterbodies

4.5 Development Community Outreach

Program Description

The Co-permittees will discuss stormwater quality management program requirements and concerns with developers, engineers, planners, architects, builders, and others, when relevant, and will emphasize requirements of the Stormwater Quality Urban Impact Mitigation Plan (SQUIMP).

Appropriate materials will be made available to educate the land use planning and development community. Suitable materials include those previously developed by the Ventura Countywide Stormwater Quality Management Program. Other materials may be developed, as needed.

The Co-permittees will track their outreach efforts to the land use planning and development community and coordinate the results of their efforts with the education and outreach program discussed in Section 2.

NPDES Permit CAS004002 Requirement(s)

None Specified.

Annual Reporting

Co-permittees will provide a description of activities of distributing brochures, community outreach efforts, public communication efforts, and include an estimate of the number of contacts made to the land development community about storm water quality via print, meetings, or other appropriate venues annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- During meetings involving developers, engineers, planners, architects, builders, and others involved in land use planning and development, the Co-permittees will discuss stormwater quality controls as appropriate.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

4.6 Stormwater Quality Staff Training

Program Description

Each Co-permittee will identify employees who are involved in planning and land development. Identified staff will be targeted for training regarding the requirements of the Program for Planning and Land Development, including requirements for the Stormwater Quality Urban Impact Mitigation Plan (SQUIMP). Targeted employees may include staff involved with planning, review, conditioning, or permitting of development projects or in administration of departments that conduct these activities.

Staff will be trained in a manner that will provide adequate knowledge of the Program for Planning and Land Development, including SQUIMP. Training may be done using informal meetings, formal classroom training, or self-guided training methods. All employees in targeted positions will be trained by January 27, 2001, and annually thereafter.

Co-permittee planning and land development staff training will include appropriate information on the prevention, detection, and investigation of illicit discharges and illegal connections (ID/IC). See Section 7 for more information on the ID/IC training program.

NPDES Permit CAS004002 Requirement(s)

PART 4.C.5
Co-permittees shall train their employees in targeted positions (whose jobs or activities are engaged in development planning) regarding the requirements of the SQUIMP no later than January 27, 2001, and annually thereafter.

Annual Reporting

Co-permittees will provide the percentage of targeted staff trained annually as part of the *Annual Storm Water Report and Assessment*.

Performance Criteria

- Co-permittees will train 90% of targeted employees by January 27, 2001 and annually thereafter. Training shall include coverage of SQUIMP requirements.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

Section 5
Construction Sites

5.1 Overview

This section discusses the following programs for construction sites:

- SWPCP Preparation, Certification, and Implementation
- Incorporating Best Management Practices
- Notice of Intent Requirement
- Construction Site Inspection Program
- Construction Community Outreach
- Stormwater Quality Staff Training

5.2 SWPCP Preparation, Certification, and Implementation

Program Description

Each Co-permittee will require that Storm Water Pollution Control Plans (SWPCPs) be prepared for appropriate construction projects and then implemented throughout the duration of construction and remain in effect until the construction site is stabilized and all construction activity is complete. The SWPCP will identify potential pollutant sources that may affect the quality of discharges to stormwater and will include the design, placement, and maintenance of appropriate Best Management Practices (BMPs) to effectively prevent the entry of pollutants from the construction site into the storm drain system. At a minimum, the preparation, certification, and implementation of the SWPCP must ensure that the following minimum requirements are met to the MEP.

- Sediments generated on the project site shall be retained using structural drainage controls.
- No construction-related materials, wastes, spills, or residues shall be discharged from the project site to streets, drainage facilities or adjacent properties by wind or runoff.
- Non-stormwater runoff from equipment and vehicle washing and any other activity shall be contained at the project site.
- Erosion from slopes and channels will be eliminated, by implementing BMPs, including, but not limited to, limiting of grading scheduled during the wet season, inspecting graded areas during rain events, planting and maintenance of vegetation on slopes, and covering erosion susceptible slopes.

SWPCPs will be developed consistent with guidance prepared by the Ventura Countywide Stormwater Quality Management Program. Current guidance for SWPCP preparation is contained in Appendix D. This guidance is subject to modification and revision as determined by the Principal Co-permittee for consistency with the Permit and to conform to conditions in Ventura County.

Storm Water Pollution Prevention Plans (SWPPPs) prepared for projects subject to the General Construction Activities Storm Water Permit – NPDES Permit No. CAS000002 (General Permit) may be accepted as the SWPCP for a project if the SWPPP meets all requirements in the General Permit and the minimum requirements noted below.

Each Co-permittee will require that a properly certified SWPCP be submitted prior to issuance of a grading permit for projects that are located in a hillside area, or will result in soil disturbance of one acre or more, or is within or discharging directly to or directly adjacent to an environmentally sensitive area (ESA).

Each Co-permittee will review their grading permit process to determine appropriate procedures for requiring the submittal of SWPCPs for candidate projects prior to issuance of grading permits, and modify procedures if needed.

Each Co-permittee will incorporate SWPCP provisions in Co-permittee construction projects, which result in soil disturbance of one acre of more, is located in a hillside area, or is directly discharging to an ESA. Provisions will set forth contractor responsibilities for SWPCP preparation, implementation, and for performance of the work and ancillary activities in accordance with the SWPCP approved by the Co-permittee for the project.

When a pre-construction meeting between the Co-permittee and contractor is held, the SWPCP and/or stormwater quality controls and management practices appropriate for the construction activity will be discussed. If a pre-construction meeting is not held, Co-permittee staff will discuss the SWPCP and/or stormwater quality controls and management practices with the contractor throughout the course of construction.

NPDES Permit CAS004002 Requirement(s)

PART 4.D.1.
Co-permittees shall require the preparation, submittal, and implementation of a Storm Water Pollution Control Plan (SWPCP) prior to issuance of a grading permit for construction projects that meet one of the following criteria:

a. Will result in soil disturbance of one acre or more in size;

b. Is within or discharging directly adjacent to an environmentally sensitive area or,

c. Is located in a hillside area.

PART 4.D.2.
Co-permittees shall prepare and implement a SWPCP on Co-permittee construction projects, as required above.

PART 4.D.3
The SWPCP shall include appropriate construction site BMPs selected from documents such as the California Storm Water BMP Handbook, the Caltrans Storm Water Handbook, Ventura County Stormwater Quality Standard Sheet, EPA database and American Society of Civil Engineers (ASCE) database. In addition, Co-permittees shall ensure the following minimum requirements are met, to the maximum extent practicable, at construction sites regardless of size:

a. Sediments generated on the project site shall be retained using structural drainage controls;

b. No construction-related materials, wastes, spills, or residues shall be discharged from the project site to streets, drainage facilities or adjacent properties by wind or runoff;

c. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site;

d. Erosion from slopes and channels will be eliminated, by implementing BMPs, including, but not limited to, limiting of grading scheduled during the wet season, inspecting graded areas during rain events, planting and maintenance of vegetation on slopes, and covering erosion susceptible slopes.

PART 4.D.4
The SWPCP must include the rationale used for selecting or rejecting BMPs. The project architect, or engineer of record, or authorized qualified designee, must sign a statement on the SWPCP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activity."

The Landowner shall sign a statement to the effect:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the SWPCP to reflect current conditions, or failing to properly and/or adequately implement the SWPCP may result in revocation of grading and/or other permits or other sanctions provided by law."

The SWPCP certification shall be signed by the landowner as follows:

(1) For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

(2) For a partnership or sole proprietorship: by a general partner of the proprietor; or

For a municipality or other public agency: by an elected official, a ranking management official (e.g., County Administrative Officer, City Manager, Director of Public Works, City Engineer, District Manager), or the manager of the construction activity if authority to sign SWPCPs has been assigned or delegated to the manager in accordance with established agency policy.

Annual Reporting

Co-permittees will provide the number of construction projects requiring SWPCPs and the percentage of projects in categories requiring submittal of a SWPCP for which SWPCPs were completed annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will require 90% of construction projects that meet the criteria specified above, to submit a SWPCP that meets the criteria also specified above, prior to issuance of a grading permit.
- For construction projects that prepare a SWPCP under this program, require implementation of the SWPCP during the entire course of construction.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

5.3 Incorporating Best Management Practices

Program Description

Each Co-permittee will require that SWPCPs for construction sites incorporate appropriate BMPs, including both control measures and management practices. The BMPs are to be selected from documents such as the Ventura Countywide Stormwater Quality Management Program standard sheet, the California Storm Water BMP Handbooks, the Caltrans Storm Water Quality Handbooks, EPA database, and ASCE database. The BMPs to be included in the SWPCP must be appropriate for use in Ventura County and must be acceptable to the permitting Co-permittee.

The SWPCP must include the rational for selecting or rejecting BMPs. The project architect, or engineer of record, or authorized qualified designee, must sign and include in the SWPCP the statement set forth in Permit Part 4.D.4 indicating the BMPs are appropriate to minimize the negative impacts from the project's construction activities on stormwater quality and that the project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained.

NPDES Permit CAS004002 Requirement(s)

PART 4.D.3.
The SWPCP shall include appropriate construction site BMPs selected from documents such as the California Storm Water BMP Handbook, the Caltrans Storm Water Handbook, Ventura County Stormwater Quality Standard Sheet, EPA database and American Society of Civil Engineers (ASCE) database. In addition, Co-permittees shall ensure the following minimum requirements are met, to the maximum extent practicable, at construction sites regardless of size:

a. Sediments generated on the project site shall be retained using structural drainage controls;

b. No construction-related materials, wastes, spills, or residues shall be discharged from the project site to streets, drainage facilities or adjacent properties by wind or runoff;

c. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site;

d. Erosion from slopes and channels will be eliminated, by implementing BMPs, including, but not limited to, limiting of grading scheduled during the wet season, inspecting graded areas during rain events, planting and maintenance of vegetation on slopes, and covering erosion susceptible slopes.

PART 4.D.4
The SWPCP must include the rationale used for selecting or rejecting BMPs. The project architect, or engineer of record, or authorized qualified designee, must sign a statement on the SWPCP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activity."

The Landowner shall sign a statement to the effect:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the SWPCP to reflect current conditions, or failing to properly and/or adequately implement the SWPCP may result in revocation of grading and/or other permits or other sanctions provided by law."

The SWPCP certification shall be signed by the landowner as follows:

(1) For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

(2) For a partnership or sole proprietorship: by a general partner of the proprietor; or

(3) *For a municipality or other public agency: by an elected official, a ranking management official (e.g., County Administrative Officer, City Manager, Director of Public Works, City Engineer, District Manager), or the manager of the construction activity if authority to sign SWPCPs has been assigned or delegated to the manager in accordance with established agency policy.*

Annual Reporting

None Specified.

Performance Criteria

- For construction projects that require a SWPCP, Co-permittees will require the inclusion of the statement specified above from the project architect, or engineer of record, or authorized qualified designee, and the certification specified above from the landowner.
- For Co-permittee construction projects that require a SWPCP, Co-permittees will include the statement specified above from the project architect, or engineer of record, or authorized qualified designee, and the Co-permittees certification specified above from an elected official, ranking management official or the manager of the construction activity.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

5.4 Notice of Intent Requirement

Program Description

Each Co-permittee will require projects subject to the General Construction Activities Storm Water Permit – NPDES Permit No. CAS000002 (General Permit) submit proof of filing a Notice of Intent (NOI) to obtain coverage under the General Permit prior to issuance of a grading permit. Proof of filing the NOI may include a copy of the completed NOI form and a copy of the check sent to the State Board, or a copy of the letter from the State Board with the Waste Discharge Identification Number (WDID) for the project.

Co-permittees will file a NOI with the State Board, and pay the appropriate fee, for all Co-permittee construction projects subject to the General Permit. The NOI and appropriate fee will be filed prior to the commencement of any construction activity covered by the General Permit. A copy of the NOI filed with the State Board will be kept in project files and in the SWPCP or SWPPP for the project, and will be supplemented with a copy of the letter providing the WDID number when it is received from the State Board (note that there may be delays in receiving the WDID from the State Board).

Projects subject to the requirements of the General Permit currently include those that involve clearing, grading, or excavation resulting in soil disturbances of at least five acres of total land (if applicable acreage is reduced, then projects of that size will be required to submit); or construction activity that results in soil disturbances of less than five acres if it is part of a larger common plan of development or sale. Co-permittee emergency work and routine Co-permittee maintenance projects may not require the preparation of a SWPCP, but shall instead performed in accordance with Section 6 – Programs for Public Agency Activities.

NPDES Permit CAS004002 Requirement(s)

PART 4.D.5.
Co-permittees shall require proof of filing a Notice of Intent for coverage under the State General Construction Activity Storm Water Permit prior to issuing a grading permit for all projects requiring coverage under the state general permit.

Annual Reporting

None Specified.

Performance Criteria

- For construction projects subject to the General Permit, Co-permittees will require proof that a NOI has been filed prior to issuance of a grading permit for 90% of all such projects.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

5.5 Construction Site Inspection Program

Program Description

Each Co-permittee will inspect construction sites with SWPCPs, a minimum of once during the wet season to determine if the SWPCP is being adequately implemented. During this SWPCP inspection, a stormwater quality control site inspection checklist, developed by the Co-permittees, will be completed to document inspection results. A guidance stormwater quality control site inspection checklist is included in Appendix D. This guidance is subject to modification and revision as determined by the Principal Co-permittee for consistency with the Permit and to conform to local conditions and policies in Ventura County.

The SWPCP inspection will seek to make a determination regarding the adequacy of implementation of the SWPCP and can be accomplished as a single purpose inspection, or as part of a routine inspection. If it is determined that the SWPCP is not being adequately implemented or where there is evidence of or a reasonable potential for sediment, construction materials or wastes, or non-stormwater runoff to be discharged from the project site, then a follow up inspection will be scheduled to take place within two weeks. If compliance is not achieved before the follow up inspection, and the site is subject to the General Construction Activities Storm Water Permit (General Permit), the RWQCB will be notified. For all other sites, a written notice shall be delivered to the owner or person responsible for implementing the SWPCP. This process will be repeated at least every two weeks until the site comes into compliance with the SWPCP.

Each Co-permittee will review their construction project inspection procedures to determine how to incorporate the minimum requirements set forth in Part 4.D.3 of the Permit into all routine inspections of construction sites, year round, and then incorporate these procedures.

When construction sites fail to comply with the SWPCP or where there is evidence of or a reasonable potential for sediment, construction materials or wastes, or non-stormwater runoff to be discharged from the project site, the inspector will implement appropriate notification and enforcement procedures. For specific instruction relating to notification and enforcement procedures, each Co-permittee will refer to their Stormwater Quality Management Ordinance. The five general levels of notification and enforcement appropriate for handling most stormwater related problems for construction projects are discussed below in increasing level of severity. The decision to use any level of control will be based upon the severity of the violation(s).

Verbal Notification. This is the first level of notification to the owner/contractor. This notification is generally limited to problems that are relatively minor and will be resolved immediately and cooperatively upon notification. All Verbal Notifications will be documented in the Inspector's Job Log. Notifying the RWQCB is usually not required when a Verbal Notification is made. In addition, Verbal Notifications may be used for more severe conditions when immediate action by the owner/contractor is required. Under this condition, the Verbal Notification is documented in the Inspector's Job Log and followed immediately with a written notification in accordance with the procedures below.

Job Memorandum. This is the first level of written notification to the owner/contractor. This notification is generally limited to problems that are relatively minor and will be resolved immediately and cooperatively upon notification and when needed to more formally follow up a Verbal Notification where the inspector determines that a written notification is required to prevent misunderstandings. The Job Memorandum may be handed to or mailed to the owner/contractor. The issuance of the Job Memorandum will be documented in the Inspector's Job Log and a copy placed in the project file. Notifying the RWQCB is usually not required when a Job Memorandum is issued.

Notice of Violation. This is the second level of written notification to the owner/contractor. This notification is used when Verbal Notifications and/or Job Memorandums fail to achieve compliance for minor problems that are repeated, and for moderate level problems that will be resolved cooperatively but may require an extended period of time to achieve desired compliance. The issuance of the Notice of Violation will be documented in the Inspector's Job Log and a copy placed in the project file.

The Notice of Violation will identify the objectives that are not being met and/or the local requirements that have not been achieved and will indicate that continued noncompliance may result in additional enforcement actions. The Notice of Violation will provide the owner/contractor with a compliance date.

Administrative Compliance Order. This is the third level of written notification to the owner/contractor. This notification is used when Notices of Violation fail to achieve compliance for moderate problems that are repeated, and for major problems that will be resolved cooperatively but may require an extended period of time to achieve desired compliance or specific direction on their resolution. The issuance of an Administrative Compliance Order will be documented in the Inspector's Job Log and a copy placed in the project file.

The Administrative Compliance Order may include any of the following: specific steps and time schedules for compliance as reasonably necessary to prevent threatened or future discharge of pollutants to stormwater; specific steps and time schedules for compliance as reasonably necessary to discontinue any illicit connection; specific requirements for containment, cleanup, removal, storage, installation of controls, or proper management of any pollutant having potential contact to stormwater; any other terms or requirements reasonably calculated to achieve full compliance with the SWPCP and/or permits.

Cease and Desist Order or **"Stop Work" Order**. This is the fourth level of written notification to the owner/contractor. This notification is used when Administrative Compliance Orders fail to achieve compliance for major problems that are repeated, for any violation that may pose an immediate and/or significant threat to the public or to the environment, or when problems are the result of deliberate, intentional, and/or criminal acts or failures to act. The issuance of the Cease and Desist Order will be documented in the Inspector's Job Log and a copy placed in the project file.

The Cease and Desist Order may direct the owner/contractor to: immediately cease and desist any construction site discharge that contains or is likely to contain pollutants that may enter the stormwater drainage system; immediately contain or divert any flow of water off the property; immediately discontinue any violation of the SWPCP and/or local requirements for construction sites; and clean up any area affected by the violation(s).

Regional Board (RWQCB) Referrals. While the Co-permittees generally have sufficient authority to enforce requirements for stormwater pollution controls at construction sites, notifying the RWQCB of stormwater program violation sites may provide the Co-permittees with additional leverage for resolving on-going or severe violations. Notifying the RWQCB is required when a follow up stormwater quality inspection determines that a site subject to the General Permit is not in compliance with the SWPCP/SWPPP.

NPDES Permit CAS004002 Requirement(s)

PART 4.D.6.
Co-permittees shall inspect sites with SWPCPs for storm water quality requirements during routine inspections a minimum of once during the wet season. For inspected sites that have not adequately implemented their SWPCP, a follow-up inspection to ensure compliance will take place within 2 weeks. If compliance has not been achieved, and the site is covered under the State General Construction Activity Storm Water Permit, the Regional Board shall be notified. Co-permittees shall develop and implement a checklist for inspecting storm water quality control measures at construction sites by January 27, 2001.

Annual Reporting

Co-permittees will provide an update of the number and type of enforcement actions, applicable to storm water enforcement, taken at construction sites annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Develop and implement a checklist for inspecting stormwater quality control measures at construction sites by January 27, 2001.
- For construction projects that require a SWPCP, inspect sites a minimum of once during the wet season for stormwater quality requirements and complete a stormwater quality control site inspection checklist.
- For sites that have not adequately implemented the SWPCP or where there is evidence of or a reasonable potential for sediment, construction materials or wastes, or non-stormwater runoff to be discharged from the project site, a written notice (Job Memorandum, Notice of Violation, Administrative Compliance Order, Cease and Desist Order) shall be prepared and delivered to the owner or person responsible for implementing the SWPCP.
- For sites that have not adequately implemented the SWPCP, conduct a follow up inspection within two weeks to ensure compliance and complete a stormwater quality control site inspection checklist.
- For sites that have not achieved compliance after the follow-up inspection, and are covered by the State General Construction Permit, Co-permittees will notify the RWQCB.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

5.6 Construction Community Outreach

Program Description

The Co-permittees will discuss stormwater quality requirements and concerns with developers, contractors, and the trades during meetings and inspections, when relevant, and will emphasize complying with stormwater quality requirements and properly implementing the project's SWPCP.

The Principal Co-permittee will assess the need for workshops and seminars as a means of outreach to the construction community. When workshops are deemed necessary, the Principal Co-permittee may either organize the seminars/workshops or possibly co-sponsor events being planned by others.

Appropriate materials will be made available to educate the construction community. Suitable materials include those previously developed by the Ventura Countywide Stormwater Quality Management Program. Other materials may be developed, as needed. A handout of stormwater pollution control guidelines for construction sites is included in Appendix D (Appendices are provided as guidance that may be updated as necessary).

The Co-permittees will make efforts to inform the construction community that the developer is responsible for all discharges from the project site, including discharges from streets and storm drains, until final acceptance of the project by the Co-permittee. It will be emphasized that this responsibility includes discharges that result from activities at owner occupied facilities (e.g., landscaping, block wall construction, etc.) conducted by the new owner and/or individuals or companies hired by the new owner.

The Co-permittees will develop a "New Owner" brochure and upon request provide these to developers, Home Owner Associations (HOAs), and residents to assist them with their efforts to prevent discharges from owner occupied portions of the project site. Developers will be encouraged to prepare their own brochures and to incorporate notices and warnings regarding stormwater pollution prevention requirements into purchase contracts, CC&Rs, and other new owner documents.

NPDES Permit CAS004002 Requirement(s)

PART 4.D.7.
Co-permittees shall discuss storm water controls at construction sites and distribute educational materials targeted to the construction community during meetings, inspections, and as appropriate.

Annual Reporting

Co-permittees will provide a description of the outreach program to the construction community and assess its effectiveness annually as part of the *Annual Storm Water Report and Assessment.* This assessment will include a discussion of the number of inspections, site visits, or other meetings conducted.

Performance Criteria

- During meetings and inspections involving developers, contractors, construction workers, and others involved in construction projects and activities, discuss stormwater quality controls as appropriate.
- Notify developers of their responsibility for all discharges from the project site, including dischargers from streets and storm drains, until final acceptance of the project by the Co-permittee.
- Notify developers that their responsibility includes discharges that result from activities at owner occupied facilities.
- Co-permittees will develop a "New Owner" brochure and upon request provide these to developers, Home Owner Associations (HOAs), and residents to assist them with their efforts to prevent discharges from owner occupied portions of the project site.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

5.7 Stormwater Quality Staff Training

Program Description

Each Co-permittee will identify employees who are involved with construction and development projects. Staff will be targeted for training regarding the requirements of the stormwater quality management program for construction projects. Targeted employees may include staff involved in administration, inspection, and enforcement of building and grading permits, as well as staff involved in Co-permittee construction, which may include engineers, inspectors, and superintendents.

Staff will be trained in a manner that will provide adequate knowledge of effective implementation of stormwater pollution prevention and control at construction, and will include site inspection and enforcement procedures. Training may be done using informal "tailgate" meetings, formal classroom training, or self-guided training methods. All employees in targeted positions regarding the requirements of the stormwater management program shall be trained by January 27, 2001, and annually thereafter.

Co-permittee construction staff training will include appropriate information on the prevention, detection, and investigation of illicit discharges and illegal connections (ID/IC). See Section 7 for more information on the ID/IC training program.

NPDES Permit CAS004002 Requirement(s)

PART 4.D.8.
Co-permittees shall train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the requirements of the storm water management program by January 27, 2001, and annually thereafter.

Annual Reporting

Co-permittees will provide the percentage of targeted staff trained annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will train 90% of targeted employees by January 27, 2001 and annually thereafter.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

Section 6
Public Agency Activities

6.1 Overview

This section discusses the following programs for Co-permittee facilities maintenance:

- Corporation Yards
- Other Facilities
  - Drainage System Operation and Maintenance
  - Roadway Operation and Maintenance
  - Pesticide, Herbicide, and Fertilizer Application and Use
  - Stormwater Quality Staff Training

6.2 Corporation Yards

Program Description

The Co-permittees utilize corporation yards to support operations and maintenance activities within their jurisdiction. Corporation yards are operated and maintained by the Co-permittees for the following activities or facilities: vehicle and equipment storage, parking, or maintenance; vehicle and equipment fueling and fueling facilities; wash racks for cleaning vehicles and equipment; material storage areas; workshops; garages; and employee support facilities, such as offices, locker rooms, and meeting rooms. The following table lists the Co-permittee designated corporation yards. Any changes to this list will be reported in the *Annual Storm Water Report and Assessment*.

Co-Permittee Corporation Yards

Co-Permittee	***Corporation Yard Name***	***Location***
Camarillo	Corporation Yard	283 South Glenn Drive, Camarillo
County of Ventura	El Rio* Moorpark* Gov. Center (GSA Maint. Area)	630 El Rio Drive, Oxnard 7150 Walnut Canyon Rd. Moorpark 800 S. Victoria Avenue, Ventura
Moorpark	Moorpark Materials Yard	675 Moorpark Avenue, Moorpark
Fillmore	PWA Corporate Yard	743 Sespe Place, Fillmore
Ojai	PWA Corporation Yard	405 South Signal Street, Ojai
Oxnard	City Yard Regional Recycling Center City Water Division Yard	1060 Pacific Avenue, Building 1, Oxnard 111 South Del Norte Boulevard, Oxnard 251 South Hayes Avenue , Oxnard
Port Hueneme	Corporate Yards	250 N. Ventura Road, Port Hueneme 700 E. Hueneme Road, Port Hueneme
San Buenaventura	Wastewater Plant Maintenance Yard Water Treatment Plant	1400 Spinnaker Drive, San Buenaventura 336 SanJon Road, San Buenaventura 5895 N. Ventura Road, San Buenaventura
Santa Paula		903 Corporation Street, Santa Paula 180 S. Palm Avenue, Santa Paula
Simi Valley		490 West Los Angeles Avenue, Simi Valley
Thousand Oaks	Municipal Service Center	1993 Rancho Conejo Rd., Thousand Oaks
Ventura County Flood Control District	*Co-located within County of Ventura Facilities	*Co-located within County of Ventura Facilities

The facilities and activities common to corporation yards can be a source of pollutant discharges to the storm drain system if not adequately controlled. Therefore, a Storm Water Pollution Control Plan (SWPCP) will be developed for each Co-permittee designated corporation yard. The purpose of the SWPCP will be to identify potential sources of pollutants at a corporation yard that may affect the quality of stormwater discharges from the facility, and to set forth a plan that identifies best management practices (BMPs) for control of these pollutant discharges to the maximum extent practicable (MEP).

The Principal Co-permittee has developed a model corporation yard SWPCP and has made the model available to the Co-permittees. The model SWPCP is contained in Appendix E. The Co-permittees will utilize the model SWPCP as guidance for development of site-specific SWPCPs for each of their corporation yards. The model SWPCP, and the Co-permittees' site-specific SWPCPs, will include the following requirements:

- Prohibit the discharge of untreated stormwater runoff to the storm drain system from the following areas at a corporation yard: toxic or hazardous material storage areas by January 27, 2001; and fueling areas, vehicle maintenance and repair areas, and temporary street maintenance material and waste areas by July 27, 2001.

- Require that all vehicle and equipment wash areas meet one or more of the following three requirements:

  - Be fully self-contained. This means the facility must be designed so that no surface runoff (including rainfall runoff) from potentially contaminated areas within the facility, wash area runoff, or sump will discharge to a storm drain or receiving water.

  - Be self contained and covered. This means the facility must incorporate a cover to protect potentially contaminated areas within the facility and wash areas from contact with rainfall, and must be designed so that no surface runoff (including rainfall runoff) from potentially contaminated areas within the facility, wash area runoff, or sump will discharge to a storm drain or receiving water. Uncontaminated runoff from the cover may be discharged to the storm drain system provided that appropriate BMPs are implemented.

  - Be equipped with a clarifier or other pretreatment facility, and properly connected to a sanitary sewer. This means that the facility must be designed so that all surface runoff (including rainfall runoff) from potentially contaminated areas within the facility, wash area runoff, and sumps will be discharged to the sanitary sewer after pretreatment in a clarifier or other pretreatment facility acceptable to the sewering agency. If the facility incorporates a cover, uncontaminated runoff from the cover may be discharged to the storm drain system provided that appropriate BMPs are implemented.

The model SWPCP may designate other minimum requirements to be incorporated by the Co-permittees into the site-specific SWPCPs. The site-specific SWPCPs will be implemented by the Co-permittees at corporation yards by July 27, 2002. In addition, the Co-permittees will implement the prohibitions with Permit-specified deadlines by the designated deadlines. A copy of the site-specific SPWPC will be kept at each corporation yard.

Periodic inspections of corporation yards will be conducted by the Co-permittees annually after July 27, 2002 to determine if the site-specific SWPCP is being implemented and is effective. To standardize corporation yard inspections, Co-permittees will use a standardized BMP checklist. An example corporation yard checklist is included in Appendix E. This inspection checklist may be updated by the Principal Co-permittee for consistency with the model SWPCP, and periodically to meet the needs and the objectives of the corporation yard inspection program.

The results of each corporation yard inspection will be brought to the attention of the appropriate staff who will determine whether operation and maintenance activities or facility BMPs require changes in order to comply with the SWPCP or if the SWPCP needs to be revised to be more effective. Revised operational and maintenance activities and facility BMPs will be prioritized and implemented as soon as practicable, and the SWPCP will be revised if necessary. If changes in activities or BMPs are needed, or if the SWPCP is revised, a follow-up inspection will be conducted before the next annual inspection to verify that the revised activities and BMPs are being implemented.

NPDES Permit CAS004002 Requirement(s)

PART 4.E.1
The Principal Co-permittee shall develop a model SWPCP for corporation yards and the Co-permittees shall implement the minimum requirements of the SWPCP in all corporation yards by July 27, 2002. Thereafter, Co-permittees shall inspect corporation yards on an annual basis.

PART 4.E.2
Co-permittees shall prohibit the discharge of untreated storm water runoff to the storm drain system from toxic or hazardous material storage areas no later than January 27, 2001.

PART 4.E.3
Co-permittees shall prohibit the discharge of untreated storm water runoff to the storm drain system from fueling areas, and repair/maintenance areas for vehicle maintenance and repair facilities no later than July 27, 2001.

PART 4.E.4
Co-permittees shall require that all vehicle/equipment wash areas must be self-contained, or covered, or equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer. This provision does not apply to fire fighting vehicles.

Annual Reporting

None Specified.

Performance Criteria

- Co-permittees will develop a model Storm Water Pollution Control Plan (SWPCP) for corporation yards and make the model available to the Co-permittees.
- Co-permittees will develop and implement a site-specific SWPCP at Co-permittee corporation yards by July 27, 2002.
- Co-permittees will inspect Co-permittee corporation yards on an annual basis after July 27, 2002 to determine if the site specific SWPCP is being adequately implemented.
- At corporation yards, Co-permittees will require that all vehicle and equipment wash areas meet one or more of the following requirements: 1) be fully self contained; or 2) be self contained and covered; or 3) be equipped with a clarifier or other pretreatment facility and properly connected to a sanitary sewer.
- At corporation yards, Co-permittees will prohibit the discharge of untreated stormwater runoff to the storm drain system from toxic or hazardous material storage areas by January 27, 2001.
- At corporation yards, Co-permittees will prohibit the discharge of untreated stormwater runoff to the storm drain system from fueling areas, and vehicle maintenance and repair areas by July 27, 2001.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

6.3 Public Agency Activities – Other Facilities

6.3.1 Drainage System Operation and Maintenance

Program Description

Catch basins, open drainage facilities, detention/retention basins, and reinforced concrete open channels are important features of the drainage system that if appropriately operated and maintained, may control the discharge of pollutants in stormwater runoff.

The Co-permittees will inspect catch basins, open drainage facilities, detention/retention basins, and reinforced concrete open channels that are part of their drainage system. These inspections do not apply to facilities that are under private ownership. Inspections will be scheduled and completed at least once each year before the wet season (Permit-defined wet season begins on October 1). Inspections will include at a minimum, the visual observation of each catch basin, open drainage facility, detention/retention basin, and concrete open channel in the system to determine if the facility has accumulations of trash, sediment, or debris that need to be removed to protect water quality or to maintain hydraulic capacity or function of the facility.

The Co-permittees will routinely clean catch basins, open drainage facilities, detention/retention basins, and reinforced concrete open channels at least once each year prior to the wet season. For catch basins, open drainage facilities, improved open channels, and reinforced concrete open channels, “routine cleaning” for these facilities means the removal of accumulations of trash, sediment, or debris that would likely be washed down stream with the next runoff event.

The Co-permittees will clean catch basins on an as-needed basis. For catch basins, “as-needed cleaning” will occur whenever trash, sediment, or debris accumulation in the catch basin is at least 40% of capacity. Because the design of detention and retention basins includes the accommodation of multi-year accumulations of debris and sediment, “routine cleaning” of these facilities means the removal of barriers from the inlet/outlet of the facility to restore the operational design of the facility. The debris/sediment will be cleaned whenever the accumulation in the basin has filled the basin to target levels established in the facility design or subsequently adopted operation and maintenance protocols for the facility. Debris basins designed to capture debris in flows from upstream of urban areas are not considered to be detention or retention basins. Debris basins will be inspected and maintained in accordance with applicable local policies and procedures appropriate for these facilities.

During all routine and as-needed drainage facility cleaning, the Co-permittees will implement appropriate BMPs to reduce to the MEP materials in the drainage facility from being washed downstream.

The Co-permittees will encourage the establishment of voluntary programs for the

collection of trash in natural stream channels. It is recognized that private property rights and liability issues may significantly impact the ability of the Co-permittees to extensively implement these programs. However, where practicable, these programs will be established in coordination with the residential outreach and education program.

The Co-permittees will undertake a program to inventory and map their storm drain system facilities. The inventory and mapping process will begin with the Co-permittees developing countywide standards for use during inventory and mapping activities in their respective jurisdictions. Each Co-permittee will be responsible for providing the mapping and inventory data in conformance with the standards developed by the Co-permittees for the program. Once inventory and mapping data are provided, the information database will be updated as needed.

NPDES Permit CAS004002 Requirement(s)

PART 4.E.5
Co-permittees shall inspect and clean the catch basins, open drainage facilities, and detention/retention basins at least one time each year prior to the wet season. At any time, any catch basin that is at least 40% full of trash and debris shall be cleaned out. All reinforced concrete open channels shall be cleaned at least once each year prior to the wet season.

PART 4.E.11
Co-permittees shall routinely conduct trash collection along, or in improved open channels within their jurisdiction.

PART 4.E.12
The Discharger shall encourage the establishment of voluntary programs for the collection of trash in natural stream channels.

Annual Reporting

Co-permittees will provide a summary, which at a minimum includes the quantity, predominant types and likely sources of trash removed from catch basin inlets annually as part of the *Annual Storm Water Report and Assessment.*

Performance Goals

- Co-permittees will inspect and clean 90% of all catch basins, open drainage facilities, detention/retention basins, and reinforced concrete open channels at least once each year prior to the wet season (Permit-defined wet season begins October 1).
- Co-permittees will clean catch basins whenever they are 40% or more full of trash and debris.
- Co-permittees will routinely remove trash from improved open channels.
- Co-permittees will encourage establishment of voluntary programs for collection of trash in natural stream channels.
- Co-permittees will develop countywide standards for the inventory and mapping of storm drain facilities, as needed.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

6.3.2 Roadway Operation and Maintenance

Program Description

Street sweeping has been identified as a program that may help reduce the discharge of street and roadway pollutants to the storm drain system. While the Co-permittees may sweep streets for many other reasons, this program implements a baseline program geared towards protection of stormwater quality. The Co-permittees are encouraged, but are not required, to continue more intensive street sweeping programs that may be implemented in their communities for other reasons.

The Co-permittees will identify curbed streets placed in the following categories within their jurisdiction, and will implement a sweeping program for these streets. The identified streets will be swept by the Co-permittee, at a minimum, in accordance with the following requirements:

- High traffic downtown areas: sweep at least four times per month;
- Moderate traffic collector streets and residential areas: sweep at least six times per year; and
- Other continuously bermed public streets: sweep at least one time per year prior to the rainy season.

For the purpose of streets in the "other" category, "prior to the rainy season" will mean sweeping the street at least once during the three month period (July, August, September) immediately prior to the wet season (Permit-defined wet season begins October 1). "Continuously bermed" will mean a street in the permitted area where a berm exists on both sides of the street without breaks. These streets are usually in more rural areas of the permitted area.

To increase the efficiency of the street sweeping, Co-permittees should make an effort to encourage voluntary relocation of street-parked vehicles on scheduled sweeping days. This may be achieved by placing temporary "no stopping" and "no parking" signs, posting permanent street sweeping signs or distributing street sweeping schedules to residents and businesses.

Street maintenance activities may potentially result in pollutants being discharged to the storm drain system if appropriate protective measures are not implemented. The Co-permittees will require that roadway maintenance staff, roadway maintenance contractors, and others implement BMPs to control the discharge of pollutants to the storm drain system as a result of roadway maintenance activities.

At a minimum, these BMPs will include the following minimum requirements:

- Prohibit saw-cutting during a storm event of 0.25 inches or greater; and
- Prohibit the discharge of untreated runoff from temporary or permanent street maintenance material and waste storage areas from entering the storm drain system.

Some Co-permittees may contract for street maintenance work and most Co-permittees issue street cut or similar permits. The Co-permittees will address work under these contracts or permits by including contract provisions and/or permit conditions that require that street maintenance or repair work comply with the minimum requirements shown above, and other BMPs required for protection of water quality.

A list of BMPs that may be required to protect water quality during street maintenance activities in addition to meeting the minimum requirements, are included in Appendix E (Appendices are provided as guidance that may be updated as necessary).

Sometimes roadway maintenance work must be conducted immediately in order to protect lives or property. The co-permittees will endeavor to conduct emergency roadway work in a manner protective of water quality; however, the minimum requirements above are not intended to apply to emergency work.

NPDES Permit CAS004002 Requirement(s)

PART 4.E.6
Co-permittees shall conduct street sweeping on curbed public streets in their permitted area according to the following schedule:

a. A monthly average not less than 4 times per month in high traffic downtown areas;

b. A yearly average of not less than 6 times per year in moderate traffic collector streets, and residential areas;

c. In addition, Co-permittees will sweep continuously bermed public streets once per year prior to the rainy season.

PART 4.E.7
Co-permittees shall prohibit street saw cutting and paving during a storm event of 0.25 inches or greater (except during emergency conditions).

PART 4.E.8
Co-permittees shall prohibit discharge of untreated runoff from temporary or permanent street maintenance material and waste storage areas.

Annual Reporting

Co-permittees will provide a summary of the total curb miles of streets swept annually, and the percentage of total curb miles swept annually, as a function of total curb miles annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will conduct street sweeping on 80% of curbed and continuously bermed public streets in the permitted areas according to the schedule specified above in PART 4.E.6 of the Permit.
- Co-permittee will prohibit street saw cutting and paving during a storm event of 0.25 inches or greater (except during emergency conditions).
- Co-permittee will prohibit the discharge of untreated runoff from temporary or permanent street maintenance material and waste storage areas.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

6.3.3 Pesticide, Herbicide, and Fertilizer Application and Use

Program Description

Pesticide, herbicide, and fertilizer application and use may potentially result in pollutants being discharged to the storm drain system if appropriate protective measures are not implemented.

The Principal Co-permittee has developed a standardized protocol for routine and non-routine application of pesticides, herbicides (including preemergents), and fertilizers. The standardized protocol was completed and distributed to the Co-permittees by July 27, 2001, and is included in Appendix E. The standardized protocol includes the following minimum requirements to control the discharge of pollutants to stormwater as a result of pesticide, herbicide, and fertilizer applications:

- Prohibit the application of pesticides, herbicides, and fertilizers during rain events;
- Prohibit the application of pesticides, herbicides, and fertilizers within one day of a rain event forecasted to be greater than 0.25 inches except for application of pre-emergent herbicides;
- Prohibit the application of pesticides, herbicides, and fertilizers after a rain event where water is leaching or running from the application area; or
- Prohibit the application of pesticides, herbicides, and fertilizers when water is running off-site from the application area.

Co-permittees will require that all staff applying pesticides are either certified by the California Department of Food and Agriculture, or are under the direct on site supervision of a certified pesticide applicator, as defined in the protocol. Co-permittees will restrict the purchase and use of pesticides and herbicides to certified staff. If purchasing is done by a purchasing agent, the purchasing agent will restrict the distribution of pesticides and herbicides to certified staff.

Co-permittees that contract out for pesticide applications will include contract provisions that require the contract applicator meet all requirements of this program, including compliance with the standardized protocol, the prohibitions, and requirements for certification and supervision of pesticide applicators.

NPDES Permit CAS004002 Requirement(s)

PART 4.E.9
The Discharger shall develop a standardized protocol for the routine and non-routine application of pesticides, herbicides (including preemergents), and fertilizers within one year after permit adoption.

There shall be no application of pesticides or fertilizers during the following conditions:

a. During rain events;

b. Within one day of a rain event forecasted too be greater than 0.25 inches except for application of preemergent herbicides;

c. After a rain event where water is leaching or running or,

d. When water is running off-site.

The Discharger shall ensure that staff applying pesticides are either certified by California Department of Food and Agriculture, or are under the direct supervision on-site of a certified pesticide applicator.

Annual Reporting

None Specified.

Performance Criteria

- Co-permittees will develop a standardized protocol for the routine and non-routine application of pesticides, herbicides (including preemergents), and fertilizers by July 27, 2001.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

6.3.4 Stormwater Quality Staff Training

Program Description

Each Co-permittee will target staff based on the type of stormwater quality and pollution issues that they could encounter during the performance of their regular maintenance activities. Training may target staff who perform activities in the following areas: stormwater maintenance; drainage and flood control systems; streets and roads; parks and public landscaping; and corporation yards.

Staff will be trained in a manner that will provide adequate knowledge for effective facility maintenance activities. Training may be done using informal "tailgate" meetings, formal classroom training, or self-guided training methods. All employees in targeted positions regarding the requirements of the stormwater management program shall be trained by January 27, 2001 and annually thereafter.

Co-permittee facilities maintenance staff training will include appropriate information on the prevention, detection, and investigation of illicit discharges and illegal connections (ID/IC). See Section 7 for more information on the ID/IC training program.

NPDES Permit CAS004002 Requirement(s)

PART 4.E.10
Co-permittees shall train their employees in targeted positions (whose jobs and activities affect storm water quality) regarding the requirements of the storm water management program no later than January 27, 2001, and annually thereafter.

Annual Reporting

Co-permittees will provide the percentage of targeted staff trained annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will train 90% of targeted employees by January 27, 2001 and annually thereafter.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

Section 7
Illicit Discharges/Illegal Connections

7.1 Overview

This section discusses the following programs for illicit discharges and new connections:

- Incident Response
- Education
- Illicit Discharges/Illegal Connections Staff Training

7.2 Incident Response

Program Description

Co-permittees will investigate the cause, determine the nature, and estimate the number of legitimate illicit discharge/dumping incidents supported by the documented information collected at the time of each potential illicit discharge/dumping report. Reports of illicit discharge/dumping may come in from the general public, as discussed in Section 2.2 Public Reporting, or may come from Co-permittee staff. Co-permittees will notify the appropriate department/agency to investigate reports of illicit discharges depending on the location of the incident and the type of material initially reported. These departments/agencies will determine the nature of the material and the extent of the spill. This may include:

- Storm drain maintenance, if the spill reaches the storm drain system.
- Street and road maintenance, if the spill is in the public right-of-way.
- Sewer system maintenance, if the material is from the sewage system.
- Industrial waste inspection, if the material is from industrial facilities.
- Fire Departments/"first responders," if the material may be hazardous.
- Contractors for hazardous materials, if the material is hazardous

All non-storm water discharges into municipal separate storm sewer systems (MS4s) and watercourses are prohibited except where such discharges are: (a) not identified as a source of pollutants; or (b) not identified as a source of pollutants, subject to conditions. The non-storm water discharges in Table 7-1 (on page 7-3) are not identified as sources of pollutants, subject to conditions.

Non-stormwater discharges are prohibited from entering the storm drain system, with the following exceptions:

Table 7-1

Discharges Not Identified as a Source of Pollutants, Subject to Conditions

- Discharges in compliance with a separate NPDES permit/waste discharge requirement (WDR) or granted a discharge exemption by the RWQCB, the Executive Officer, or the State Water Resources Control Board.
- Flows from riparian habitats or wetlands
- Diverted stream flows
- Natural springs
- Rising ground waters
- Uncontaminated groundwater infiltration
- Water line flushing
- Discharges from potable water sources
- Foundation drains
- Footing drains
- Air conditioning condensate
- Water from crawl space pumps
- Reclaimed and potable irrigation water
- De-chlorinated swimming pool discharges
- Individual residential car washing
- Sidewalk washing
- Discharges or flows from emergency fire fighting activities

Each of the aforementioned non-storm water discharges must meet the following conditions in order to presume that the discharge will not be a source of pollutants.

1. The discharge must not be known to contain any pollutants or containments that will cause a condition of pollution, contamination, or nuisance in the receiving water.
2. The source of the discharges is not from a site: under clean up and/or abatement orders; where previous water or soil testing has indicated the presence of contaminants or pollutants; where toxic or hazardous chemicals, substances, or wastes are or have been treated, stored, or disposed; or that is known as a result of past investigative or exploratory work to be a source or potential source of contaminants or pollutants of concern.

3. The discharge must not contain any visible sediment.

4. The chlorine level/residual must be below 0.1 ppm (mg/L).

5. The pH must be between 6.0 and 9.0.

6. The discharge is exempt from conditions (1) – (6) if it results from fire fighting activities that are related to emergencies or discharges from potable water sources during emergencies.

The Co-permittees may presume that the non-storm water discharges listed in Table 7-1 (on page 7-3) and that meet the conditions above may be discharged to the storm drain system. However, the Co-permittee may prohibit these discharges at any time and shall prohibit these discharges if it becomes evident that conditions are not being met or that pollutants or contaminants harmful or potentially harmful to receiving waters are or may be discharged.

If any of the above non-storm water discharges are determined to be a source of pollutants, the discharge need not be prohibited if the Co-permittee implements or requires the discharger to implement appropriate best management practices (BMPs) to ensure that the discharge will meet the conditions noted above before entering the storm drain system.

The following are examples of candidate BMPs (Numbered BMPs are from the California Storm Water Best Management Practice Handbooks) for non-storm water discharges that are identified as pollutant sources. The Co-permittees may identify alternative BMPs or additional BMPs to bring discharges into compliance with conditions.

BMPs	Applicable BMPs
Dechlorination	5
pH increasers or decreasers	6
Public Education/Participation (SC0)	1, 2, 3, 4, 5, 6
Non-Storm Water Discharges to Drains (SC1)	1, 2, 3, 4, 5, 6, 7
Vehicle and Equipment Washing and Steam Cleaning (SC3)	1, 2, 4, 6
Contaminated or Erodible Surface Areas (SC10)	1, 2, 3, 4
Outlet Protection (ESC40)	3, 4
Storm Drain Inlet Protection (ESC54)	3, 4
Sediment Trap (ESC55)	3, 4

7.2 Incident Response

7.2.1 Source Determination

Program Description

To help determine whether or not the material is an illicit discharge/dumping; Co-permittees will attempt to determine the source. This investigation will generally be a visual observation of the storm drain system and/or activities on the surface. A field inspection crew will investigate the surface drainage system in the vicinity of suspected illicit discharges. This may include accessible areas in the public right-of-way adjacent to residences and businesses, catch basins, open channels near known points of discharge, and upstream manholes. A form that may be used to document illicit discharge investigations is included in Appendix F (Appendices are provided as guidance that may be updated as necessary).

If the source is determined, voluntary cleanup/termination or enforcement procedures will be initiated, and steps will be taken to prevent its recurrence. If the source is not determined, or if the Co-permittee so chooses, the appropriate Co-permittee departments or contractors will be notified to contain and clean up the material. Because the situations and materials will vary widely, procedures will vary as well. The following are the steps that will generally be taken to determine the source:

- Verify the location of the spill/discharge.
- Investigate the cause (look for the origin).
- Determine the nature and estimate the amount of illicit discharged/dumped material.
- Containment and cleanup.
- When appropriate, Co-permittees will refer documented non-stormwater discharges/connections or dumping to an appropriate agency for investigation.
- When appropriate, Co-permittees will issue an enforcement order that will result in cessation of the illicit discharge and/or elimination of the illicit connection (to occur within six months after the Co-permittee gains knowledge of the discharge/connection).
- If appropriate, Co-permittees will notify the RWQCB.

7.2.2 Illicit Connections

Program Description

The Principal Co-permittee will take a pro-active approach to eliminate illicit connections. Proposed projects requiring new connections to VCFCD jurisdictional channels will be reviewed and conditioned for stormwater quality during permit issuance procedures. Staff involved in reviewing proposed projects will be trained as described in Section 7.4.

7.2.3 Enforcement

Program Description

Enforcement procedures will be implemented to eliminate illicit discharges/disposal and illegal connections. The procedures will be followed when the source and nature of the discharge is known. Enforcement procedures will be consistent with the Co-permittees' legal authority stipulated in their respective ordinances. While legal authority for Co-permittees varies, most enforcement processes follow a common sequence.

Typically they include:

- Verbal or written warnings for minor violations.
- Formal notice of violation or non-compliance with specific actions and time frames for compliance.
- Cease and desist or similar order to comply.
- Specific remedies such as civil penalties (e.g., infraction), non-voluntary termination with cost recovery, or referral for criminal penalties or further legal action.

Enforcement activity will begin at the appropriate level as determined by the Co-permittee's authorized representative. It need not necessarily be imposed sequentially. For incidents that are more severe or threatening at the outset, enforcement will start at an increased level. Enforcement steps will be accelerated if there is evidence of a clear failure to act, or an increasing severity of the discharge. Enforcement actions for violating any of the provisions of the Co-permittees' ordinances may include any of the following or a combination thereof, at the discretion of the prosecuting authority:

- Criminal Penalties
    - Monetary punishment
    - Imprisonment
- Civil Penalties
    - Monetary punishment

As staff members are conducting their regular activities, they will take note of evidence of non-stormwater discharges and/or connections to the storm drain system. This may include items such as flows, stains, deposited materials, and pipes or hoses. Evidence will be documented in writing.

The incident will be reported to the appropriate Co-permittee and will be investigated as described in Section 7.2.1, Source Determination.

NPDES Permit CAS004002 Requirement(s)

PART 4.F.1

Co-permittees shall investigate the cause, determine the nature and estimated amount of reported illicit discharge/dumping incidents, and refer documented non-storm water discharges/connections or dumping to an appropriate agency for investigation, containment and cleanup. Appropriate action including issuance of an enforcement order that will result in cessation of the illicit discharge, and/or elimination of the illicit connection, shall take place within six months after the Co-permittee gains knowledge of the discharge/connection.

Annual Reporting

Co-permittees will provide the number of reports of illicit discharges that Co-permittees responded to, percentage that were identified as actual illicit discharges, and percentage of the actual illicit discharges where the incident was either cleaned up, referred to another responsible agency and/or follow up/education with the discharger was conducted annually as part of the *Annual Storm Water Report and Assessment.*

For groups of identified illicit discharge types where the probable causes for the discharge can be identified, Co-permittees will report probable causes and the actions taken to prevent similar discharges from occurring annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will provide the number of illicit connections identified and eliminated annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will provide number and type of enforcement actions for storm water illicit discharges and/or illicit connections annually as part of the *Annual Storm Water Report and Assessment.*

Co-permittees will provide a summary from records on illicit discharges and connections which includes type of material, type of source, date of initial inspection, enforcement action taken, date of follow-up inspection, date of conclusion/clean up/removal/follow up/education annually as part of the *Annual Storm Water Report and Assessment.*

Performance Criteria

- Co-permittees will investigate 90% of reported illicit discharge/dumping incidents.
- When appropriate or necessary, Co-permittees will refer documented non-stormwater discharges/connections or dumping to the appropriate agency for investigation, containment, and cleanup.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

7.3 Education

Program Description

Automotive, food, and construction site inspection visits will include distribution of educational material that describes illicit discharges and provides a staff contact number for reporting illicit discharges. Educational components from Programs for Residents, Programs for Industrial/Commercial Businesses, Programs for Construction Sites, and Programs for Illicit Connections/Illegal Discharges will be developed with a common goal:

- Instruct special groups on elements of stormwater quality, tools available, where to find assistance/reference materials and where efforts from the public/private sectors are best focused to be most effective.

New information developed for industrial facility educational materials will include information describing illicit discharges. Contacts from this educational effort will count towards the overall outreaching effort as specified in Section 2 of this SMP. The educational information will include:

- Types of discharges prohibited,
- How to prevent illicit discharges,
- What to do in the event of an illicit discharge, and
- Enforcement actions the facility may be subject to, including penalties that can be assessed.

NPDES Permit CAS004002 Requirement(s)

PART 4.F.3
Automotive, food facility, construction and Co-permittee facility site inspection visits shall include distribution of educational material that describes illicit discharges and provides a contact number for reporting illicit discharges.

PART 4.F.4
New information developed for Phase I industrial facility educational material shall include information describing illicit discharges. The information shall include: types of discharges prohibited, how to prevent illicit discharges, what to do in the event of an illicit discharge, and the array of enforcement actions the facility may be subject to, including penalties that can be assessed.

Annual Reporting

None Specified.

Performance Criteria

- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

7.4 Illicit Discharges/Illegal Connections Staff Training

Program Description

Each Co-permittee will target its staff based on the type of stormwater quality and pollution issues that they could encounter. Training may target drainage, roadway, landscape and facilities staff, industrial pretreatment inspectors, and code enforcement officers. Training of these staff may be incorporated with existing drainage, roadway, and business inspection programs discussed in Sections 3 and 6.

The goal of training staff is to raise the level of awareness of illicit connections and illegal discharges. When members of this training are conducting their regular activities, the likelihood is increased that non-stormwater discharges and/or connections to the storm drain system will be caught. This may include observed items such as flows, stains, deposited materials, and pipes or hoses. Evidence will be documented in writing to support the estimated number of illicit discharges/illegal connections reported.

Staff will be trained in a manner that will provide adequate knowledge for effective illicit discharge identification, investigation, reporting, and/or clean up. Training may be done using informal "tailgate" meetings, formal classroom training, or self-guided training methods. All employees in targeted positions regarding the requirements of illicit discharges will be trained by January 27, 2001 and annually thereafter. ID/IC training has been incorporated into the training proposed for staff in other programs where training is a Permit requirement.

NPDES Permit CAS004002 Requirement(s)

PART 4.F.2
Each Co-permittee shall train its employees in targeted positions, as defined by the Ventura County SMP, on how to identify and report illicit discharges by January 27, 2001, and annually thereafter.

Annual Reporting

None Specified.

Performance Criteria

- Co-permittees will train 90% of targeted employees by January 27, 2001 and annually thereafter. Training will include education in illicit discharge/dumping and illegal connections identification, investigation, reporting and/or clean up.
- Comply with all requirements and criteria relative to this Program as set forth in the Permit and the SMP.

Section 8
Program Evaluation

8.1 Overview

The programs developed under this SMP will be evaluated for their effectiveness at regular intervals. The following subsections outline several measures that will be used to collect data, compare and evaluate information, report results, and modify the program as needed.

Generally, program evaluation is conducted by evaluating implementation of program elements which are likely to lead to stormwater quality. The nature of water quality monitoring is such that the program is not likely within this Permit term to see measurable changes in water quality. As a result, program evaluation techniques must use non-water quality parameters.

8.2 Performance Criteria

Programs described in the SMP have a list of implementation activities that Co-permittees will follow, and most have associated performance criteria. While the permit standard will continue to be the MEP, the performance criteria are to be considered the minimum level of implementation that each Co-permittee must achieve to conduct an effective program.

The performance criteria are generally items that are quantifiable, and can be reported with some consistency between Co-permittees. Although many activities will be implemented by the Co-permittees, the performance criteria are established for only those activities that can be used to monitor program implementation and ultimately serve as indicators of program effectiveness.

8.3 Internal Reporting

Several methods will be used to facilitate internal reporting:

- Forms for collecting program data;
- An electronic database to compile data from all Co-permittees; and
- A program structure to facilitate an inter-agency/intra-agency exchange of information.

Co-permittees will keep track of program data internally in sufficient detail to implement and document Co-permittee activity and to help track information required for the SMP. This information will be kept at the Co-permittee level and may go beyond the summary information that is reported to the Principal Co-permittee. Co-permittees may choose to share data forms and develop standards as part of the subcommittee process described below.

To compile data on a countywide level, Co-permittees will use an electronic Data Management and Reporting System. The Co-permittees will use the database to report program data to the Principal Co-permittee by August 1, 2001 and annually thereafter.

As discussed in Section 1.4, the program management structure is an integral part of internal reporting among Co-permittees, departments, and agencies. At Subcommittee and Management Committee meetings, Co-permittees will discuss the progress of program implementation, including challenges, opportunities for improvement, ideas, and questions. This process will keep Co-permittees informed of the overall program implementation status.

8.4 Annual Reports

The Permit identifies two annual reports to be submitted to the RWQCB, the *Storm Water Monitoring Report* and the *Annual Storm Water Report and Assessment.* The requirements for these are reports are contained within the Permit and the Monitoring and Reporting Program, CI7388. CI7388 sets forth program reporting requirements (Part I), stormwater quality monitoring requirements (Part II), and program evaluation schedules (Part III).

The *Storm Water Monitoring Report* contains monitoring data available and is prepared by the Principal Co-permittee for submittal to the RWQCB by July 15 of each Permit year. The *Annual Storm Water Report and Assessment* is prepared by the Principal Co-permittee and submitted to the RWQCB by October 1 of each Permit year.

Additionally, each Co-permittee will perform a self-audit of their program through January 1 of each Permit year, and will report the results to the Principal Co-permittee by February 1 of that same Permit year.

8.4.1 Storm Water Monitoring Report

The *Storm Water Monitoring Report* contains the details of stormwater quality sample collection and available analytical results of samples collected during the wet weather. Analytical results from the previous wet season are the main focus of this report.

8.4.2 Annual Storm Water Report and Assessment

Information for generating the *Annual Storm Water Report and Assessment* will be collected by Co-permittees in the electronic Data Management and Reporting System for the period July 1 through June 30 and submitted to the Principal Co-permittee by August 1 of each Permit year. The *Annual Storm Water Report and Assessment* contains the summarized program data and a general summary of the stormwater quality monitoring information. The *Annual Storm Water Report and Assessment* also includes any recommended or required changes to the SMP resulting from SMP evaluation.

8.5 Stormwater Management Plan Revisions

The Management Committee and subcommittees will use information from the above activities to revise the programs as needed to better address the quality of stormwater runoff. Activities may include reviewing: illicit discharge reports to determine the most useful education techniques and topics for pursuit; outreach methods to assess the most effective process to reach the general public; businesses to determine any additional types that should be targeted for the business inspection program; and pollutants of concern, discussed in Section 9.4, to further determine their source. Programs may be modified to include best management practices most likely to control the sources of the pollutants.

Proposed changes discussed in subcommittee meetings will be taken to the Management Committee for final approval. Only proposed program changes to the SMP will be listed in the *Annual Storm Water Report and Assessment.*

Section 9
Monitoring

9.1 Proposed Structure of Monitoring Program

This monitoring program is designed to provide water quality monitoring data to be used to assess the effectiveness of and provide direction to the management programs discussed in Sections 2 through 7. To provide this information, the monitoring program consists of four types of monitoring activities:

- Discharge Characterization/Outfall Monitoring
- Receiving Water Quality Impacts and Watershed Activities
- Pollutant Source Identification
- Management Program Effectiveness

These types of monitoring activities address five major objectives:

- Characterize and determine long term trends in stormwater discharges by monitoring sites representative of different land uses.
- Establish the impact of stormwater discharges on receiving waters by conducting receiving water quality monitoring.
- Identify pollutant sources based on analysis of monitoring data, inspection of businesses, and investigation of illicit discharges.
- Define management plan effectiveness using data collected before and after implementation of pollution prevention programs.
- Develop methodology to refine estimates of annual pollutant loads to receiving waters.

During the five years of the first permit term (August 25, 2994 – July 27, 2000), the Program achieved these objectives by:

- Conducting discharge characterization monitoring at three to six outfall monitoring sites for two to five storms per year, to characterize stormwater discharges in the permit area. Discharges from each outfall monitoring site primarily represent a single land use in the permit area: commercial, industrial, residential, and agricultural.
- Conducting receiving water monitoring at two to three sites for two to five storms per year to assess impacts from stormwater discharges on receiving waters in the permit area.
- Conducting a special study of receiving water quality in tributaries to Malibu Creek during dry and wet weather to assess impacts of Ventura County discharges on the Malibu Creek Watershed.
    - Analyzing monitoring data to develop pollutant loads and models to identify long term trends in stormwater pollutant loadings and evaluate effectiveness of the management programs.
    - Evaluating the results of discharge characterization and receiving water monitoring, the illicit discharge program, and regulatory requirements to determine a prioritized list of Pollutants of Concern (POCs) for the management program.

During the next five-year permit term (July 27, 2000 – 2005), the key elements of the proposed Plan are as follows:

- Continued limited discharge characterization monitoring at one residential, one industrial, and one agricultural discharge site.
- Toxicity monitoring at three outfall monitoring sites until baseline information has been established.
- Continued receiving water monitoring at two receiving water monitoring sites.
- Develop and conduct an instream bioassessment monitoring program for the Ventura River.
- Develop and conduct a mass emission monitoring program to establish baseline conditions and load estimates for the Ventura River, Calleguas Creek, and Santa Clara River.
- Participate as part of the Federal 205(j) non-point source grant study in the Calleguas Creek Watershed, in meetings of the Santa Clara River Enhancement and Management Plan, the Calleguas Creek Watershed Management Plan, and the Steelhead Restoration and Recovery Plan, and in storm water studies with the Southern California Coastal Water Research Project.
- Participate in the development and implementation of volunteer monitoring programs.
- Identify and investigate general sources of prioritized POCs. Investigate and implement control measures to reduce the discharge of POCs from identified significant sources.
- Refine Watershed Management Model (WMM) to estimate pollutant loads and long term trends in stormwater pollutant loadings if needed for TMDL development.

9.2 Discharge Characterization and Outfall Monitoring

The discharge characterization and outfall monitoring during the first permit term consisted of wet weather sample collection and analysis from land use characterization monitoring sites. This section summarizes the monitoring site locations, storm events captured, water quality results, and the proposed monitoring program for the discharge characterization sites.

9.2.1 Monitoring Site Descriptions

The discharge characterization monitoring sites were chosen to represent typical, single land use watersheds within the permit area. Two residential, two industrial, one commercial, and one agricultural monitoring sites were selected and monitored during the first permit term using automated sampling equipment. Table 9-1 (shown below) provides a summary of the monitoring sites and descriptions of site characteristics.

Table 9 - 1
Discharge Characterization Monitoring Location Characteristics

Station Code	Location	Land Uses	Drainage Basin Area (acres)	Rain Gauge Location
R-1	Swan Street and Macaw Avenue (San Buenaventura)	Residential	65	County Government Center
R-2	Lawrence Way and Hill Street (Oxnard)	Residential	121	Oxnard Airport
C-1	Via del Norte and Los Olivos (Oxnard)	Commercial	62	Oxnard Airport
I-1	Via Pescador and Avenida Acaso (Camarillo)	Industrial	30	Camarillo
I-2	Ortega Street (San Buenaventura)	Industrial	189	County Government Center
A-1	Wood Road at Revolon Slough	Agricultural	350 (estimated)	Oxnard Airport

The locations of the discharge characterization sites are shown in Figure 9-1 (on page 9-4). The Swan Street (R-1) site receives runoff from a relatively new (15 to 20 year old) residential neighborhood containing single-family dwellings, churches, parks, and a recreation center. The Lawrence Way (R-2) site receives runoff from an older area that contains single-family and multi-family dwellings. The Via del Norte (C-1) site receives runoff from a new area of mixed commercial use. Auto dealerships and a warehouse shopping club/store are the primary businesses in the basin. The Via Pescador (I-1) site is located in an industrial park (approximately 10-15 years old) typical of newer industrial parks throughout the county. A mixed industrial area containing older manufacturing facilities, newer industrial parks, and a few undeveloped lots was selected as the other industrial site on Ortega Street (I-2). The Wood Road (A-1) site drains a basin comprised almost entirely of agricultural land, except for a small number of farm residences and associated facilities for equipment maintenance and storage.

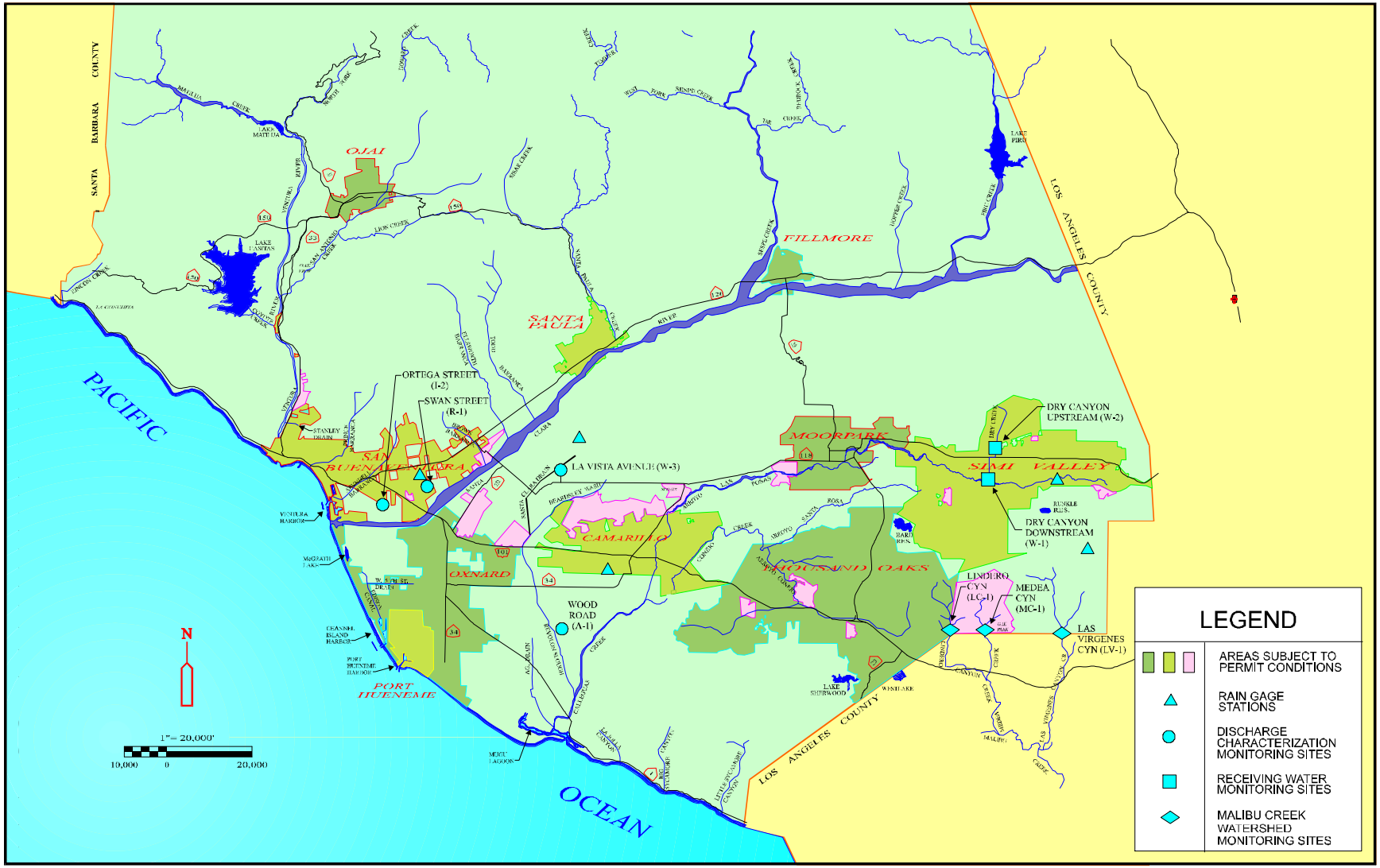

Figure 9-1
Ventura County
Locations of Rain Gages and Monitoring Stations

9.2.2 Storm Events Monitored

The monitoring events captured at each discharge characterization site are listed in Table 9-2 (shown below).

Table 9 - 2
Summary of Discharge Characterization Monitoring Dates

Monitoring Station	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
A-1, Wood Rd.	NS	NS	2/13/95 3/21/95	1/31/96 2/19/96 3/4/96	10/29/96 11/20/96 11/26/96	11/26/97 12/5/97 1/9/98 1/29/98 3/24/98
C-1, Via del Norte	2/7/93 2/18/93 3/25/93	11/29/93 1/24/94 2/17/94 3/24/94	10/5/94 11/10/94 12/24/94 2/13/95	12/12/95 1/21/96 1/31/96 2/19/96	NS	NS
I-1, Via Pescador	2/7/93 2/18/93 3/25/93	11/29/93 1/24/94 2/17/94 3/24/94	10/5/94 12/24/94 2/13/95 3/21/95	12/12/95 1/21/96 1/31/96 2/19/96	NS	NS
I-2, Ortega St.	1/7/93 2/7/93 2/18/93 3/25/93	11/29/93 1/24/94 2/17/94 3/24/94	10/5/94 11/10/94 12/24/94 2/13/95	12/12/95 1/21/96 1/31/96 2/19/96	10/29/96 11/20/96	11/10/97 3/24/98
R-1, Swan St.	2/7/93 2/18/93 3/25/93	11/29/93 1/24/94 2/17/94 3/24/94	10/5/94 11/10/94 12/24/94 2/13/95	12/12/95 1/21/96 1/31/96 2/19/96	10/29/96 11/20/96 1/20/97	11/10/97 3/24/98
R-2, Lawrence Way	1/7/93 2/7/93 2/18/93 3/25/93	11/29/93 1/24/94 2/17/94 3/24/94	10/5/94 11/10/94 12/24/94 2/13/95	12/12/95 1/21/96 1/31/96 2/19/96	NS	NS

NS Monitoring location not sampled during the permit year.

Monitoring at R-2, C-1, and I-1 was discontinued after the 1995/96 monitoring year as R-2 and I-1 were determined to be of similar quality to R-1 and I-2 respectively. The discharges from both residential and industrial sites were determined to be of similar quality to other regional and national urban runoff databases, and sufficient data had been collected at each site to adequately define baseline conditions. C-1 was eliminated because the site had a backflow condition that appeared to be affecting the quality of the stormwater samples. Efforts to improve the flow conditions at the site and thereby improve the integrity of the samples were not successful and monitoring was discontinued. An agricultural discharge characterization site (A-1) was added during 1994/95.

9.2.3 Monitoring Results

9.2.3.1 Water Quality Results

Stormwater monitoring data collected during the events listed in Section 9.2.2 were compiled and summary statistics developed for each site. Tables 9-3 through 9-8 (on pages 9-6 through 9-15) list the means, medians, and coefficients of variation for detected constituents for each discharge characterization site.

Table 9 - 3
Summary Statistics for Detected Constituents at A-1, Wood Rd. (1994-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	9	100%	51	15	1.6
COD	mg/L	6	100%	188	165	0.55
Oil and Grease	mg/L	10	40%	0.93	0.33	1.92
TRPH	mg/L	8	38%	0.85	0.4	1.09
Total Organic Carbon	mg/L	9	100%	18	7.6	1.2
Conductivity	umho/cm	11	100%	891	696	0.76
pH	pH units	11	100%	7.5	7.4	0.03
Total Dissolved Solids	mg/L	9	100%	530	528	0.48
Total Suspended Solids	mg/L	9	100%	1144	1160	0.29
Hardness	mg/L	9	100%	278	255	0.44
Chloride	mg/L	3	100%	16.6	18	0.25
Nutrients						
Ammonia-Nitrogen	mg/L	10	100%	2.3	1.8	0.99
Kjeldahl-Nitrogen	mg/L	9	100%	8.1	7.8	0.43
Nitrate Nitrogen	mg/L	9	100%	13.8	12.5	0.57
Orthophosphate-P	mg/L	4	100%	0.64	0.68	0.22
Phosphorus, Total	mg/L	10	100%	3.3	3.0	0.49
Phosphorus, Dissolved	mg/L	10	100%	1.9	1.1	1.1
Bacteriological[2]						
Total Coliform	MPN/100ml	11	100%	261,800	160,000	1.2
Fecal Coliform	MPN/100ml	11	100%	32,700	13,000	1.6
Fecal Streptococcus	MPN/100ml	11	100%	82,800	50,000	1.1
Metals[3]						
Arsenic, Total	µg/L	9	100%	15.6	16	0.28
Arsenic, Dissolved	µg/L	9	100%	4.9	4.9	0.52
Cadmium, Total	µg/L	9	100%	4.6	4.5	0.46
Cadmium, Dissolved	µg/L	9	100%	1.6	1.9	0.54
Chromium, Total	µg/L	9	100%	131	84	1.2
Chromium, Dissolved	µg/L	9	100%	11.8	12	0.50
Copper, Total	µg/L	9	100%	92.6	92	0.23
Copper, Dissolved	µg/L	9	100%	24.4	26	0.45
Lead, Total	µg/L	9	100%	32.3	22.6	0.74
Lead, Dissolved	µg/L	9	78%	11.4	6.1	1.5
Mercury, Total	µg/L	10	50%	0.11	0.046	1.6
Mercury, Dissolved	µg/L	4	100%	0.0021	0.0015	0.71
Nickel, Total	µg/L	9	100%	95.1	93	0.26
Nickel, Dissolved	µg/L	9	100%	35.5	33	0.82
Selenium, Total	µg/L	9	100%	1.36	1.1	0.37
Selenium, Dissolved	µg/L	9	56%	0.82	0.75	0.18
Silver, Total	µg/L	9	44%	0.96	0.31	1.1

Table 9 - 3
Summary Statistics for Detected Constituents at A-1, Wood Rd. (1994-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Silver, Dissolved	µg/L	9	33%	0.26	0.19	0.45
Zinc, Total	µg/L	9	100%	272	304	0.44
Zinc, Dissolved	µg/L	9	100%	63	45	0.75
EPA 625[4]						
2,3,5-Trimethlynaphthalene	ng/L	3	33%	ID	ID	ID
Chrysene	ng/L	10	10%	ID	ID	ID
Fluoranthene	ng/L	10	20%	ID	ID	ID
Phenanthrene	ng/L	10	30%	36.9	35.9	0.26
Pyrene	ng/L	10	20%	ID	ID	ID
bis(2-ethylhexyl)phthalate	ng/L	10	30%	290	289	0.11
Butyl benzyl phthalate	ng/L	10	20%	ID	ID	ID
Di-n-octyl phthalate	ng/L	10	30%	19.2	19.2	0.06
Dibutyl phthalate	ng/L	10	30%	104	104	0.08
Diethyl phthalate	ng/L	10	30%	156	152	0.27
Dimethyl phthalate	ng/L	10	20%	ID	ID	ID
EPA 8080						
Aroclor 1242	ng/L	10	10%	ID	ID	ID
2,4'-DDD	ng/L	10	40%	39.8	12.5	2.1
2,4'-DDE	ng/L	10	30%	ID	ID	ID
2,4'-DDT	ng/L	10	60%	96.4	18.6	1.9
4,4' - DDD	ng/L	10	30%	ID	ID	ID
4,4' - DDE	ng/L	10	70%	251	180	0.92
4,4' - DDT	ng/L	10	90%	259	218	0.82
Aldrin	ng/L	10	10%	ID	ID	ID
beta-BHC	ng/L	10	10%	ID	ID	ID
delta-BHC	ng/L	10	10%	ID	ID	ID
gamma-BHC	ng/L	10	30%	10.2	2.7	1.8
Endosulfan II	ng/L	10	20%	ID	ID	ID
Endrin	ng/L	10	20%	ID	ID	ID
Heptachlor	ng/L	10	10%	ID	ID	ID
EPA 8140						
Chlorpyrifos	µg/L	11	18%	ID	ID	ID
Dichlorvos	µg/L	11	9%	ID	ID	ID

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.
4 Variations in number of sample results from differences in constituents reported by the various laboratories used during the permit term.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 4
Summary Statistics for Detected Constituents at C-1, Via Del Norte (1993-1996)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	14	79%	40.1	17	1.8
COD	mg/L	14	100%	154	115	0.85
Oil and Grease	mg/L	15	80%	5.7	5	0.75
TRPH	mg/L	8	75%	1.7	1.4	0.82
Total Organic Carbon	mg/L	7	100%	25.1	17	1.2
Conductivity	umho/cm	10	100%	126	89	0.99
pH	pH units	13	100%	6.8	6.8	0.05
Total Dissolved Solids	mg/L	14	100%	75.0	53	1.1
Total Suspended Solids	mg/L	14	100%	403	161	1.5
Hardness	mg/L	14	100%	40.4	24.5	1.2
Nutrients						
Ammonia-Nitrogen	mg/L	14	86%	0.47	0.25	1.1
Kjeldahl-Nitrogen	mg/L	14	100%	4.3	2.4	1.00
Nitrate Nitrogen	mg/L	14	100%	0.43	0.42	0.62
Nitrite Nitrogen	mg/L	4	100%	0.12	0.026	1.7
Nitrogen	mg/L	1	100%	ID	ID	ID
Phosphorus, Total	mg/L	14	100%	0.71	0.45	0.93
Phosphorus, Dissolved	mg/L	14	100%	0.38	0.30	0.78
Bacteriological[2]						
Total Coliform	MPN/100ml	8	100%	107,000	160,000	0.68
Fecal Coliform	MPN/100ml	15	100%	4530	1300	1.4
Fecal Streptococcus	MPN/100ml	15	100%	32,530	16,000	1.6
Metals						
Antimony, Total	µg/L	3	67%	ID	ID	ID
Beryllium	µg/L	3	33%	ID	ID	ID
Arsenic, Total	µg/L	13	92%	3.9	3	0.96
Arsenic, Dissolved	µg/L	10	70%	1.1	1	0.67
Cadmium, Total	µg/L	14	86%	1.9	1.7	0.89
Cadmium, Dissolved	µg/L	11	82%	0.62	0.5	0.96
Chromium, Total	µg/L	14	100%	15.8	4.8	1.5
Chromium, Dissolved	µg/L	11	100%	2.9	1.7	0.89
Copper, Total	µg/L	14	100%	59.6	29.5	1.2
Copper, Dissolved	µg/L	11	100%	10.8	9	0.52
Lead, Total	µg/L	14	100%	29.1	10.5	1.5
Lead, Dissolved	µg/L	11	91%	4.9	3.4	0.89
Mercury, Total	µg/L	14	14%	ID	ID	ID
Nickel, Total	µg/L	14	86%	26.2	17	1.1
Nickel, Dissolved	µg/L	11	91%	15.9	18	0.60
Selenium, Total	µg/L	13	31%	0.55	0.31	0.93
Selenium, Dissolved	µg/L	10	10%	ID	ID	ID
Silver, Total	µg/L	13	62%	0.71	0.2	1.5
Silver, Dissolved	µg/L	10	30%	0.21	0.11	1.0
Zinc, Total	µg/L	14	100%	332	164	1.1
Zinc, Dissolved	µg/L	11	100%	33.8	37	0.50
EPA 625						
Bis(2-ethylhexyl)phthalate	ng/L	13	23%	7297	2196	1.6

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.

2 For microbiological counts reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.

ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, at least 2 sample results were needed for statistics to be generated.

Table 9 - 5
Summary Statistics for Detected Constituents at R-1, Swan Street (1993-1998)1

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	20	90%	27.7	15.5	0.94
COD	mg/L	18	100%	167	87.5	1.4
Oil and Grease	mg/L	17	76%	3.2	2.4	0.82
TRPH	mg/L	7	100%	1.7	1.4	0.63
Total Organic Carbon	mg/L	12	100%	55.7	15	1.8
Conductivity	umho/cm	14	100%	115	70.5	0.93
pH	pH units	17	100%	7.0	7.1	0.06
Total Dissolved Solids	mg/L	20	100%	122	72	0.98
Total Suspended Solids	mg/L	20	100%	156	130	0.67
Hardness	mg/L	20	100%	41.4	28	0.94
Chloride	mg/L	3	100%	20.3	12	1.1
Nutrients						
Ammonia-Nitrogen	mg/L	20	90%	0.68	0.4	1.1
Kjeldahl-Nitrogen	mg/L	20	100%	4.6	3.1	1.1
Nitrate Nitrogen	mg/L	20	100%	1.8	0.57	2.4
Nitrite Nitrogen	mg/L	4	100%	0.02	0.011	0.79
Nitrogen, Total	mg/L	1	100%	ID	ID	ID
Orthophosphate-P	mg/L	2	100%	0.69	0.69	1.1
Phosphorus, Total	mg/L	20	100%	0.78	0.59	0.82
Phosphorus, Dissolved	mg/L	20	100%	0.45	0.40	0.67
Bacteriological[2]						
Total Coliform	MPN/100ml	11	100%	65,800	50,000	0.66
Fecal Coliform	MPN/100ml	18	100%	17,200	6000	2.1
Fecal Streptococcus	MPN/100ml	18	100%	48,300	24,000	1.2
Metals[3]						
Antimony, Total	µg/L	3	67%	ID	ID	ID
Thallium, Total	µg/L	3	33%	ID	ID	ID
Arsenic, Total	µg/L	17	94%	2.5	2	0.84
Arsenic, Dissolved	µg/L	14	64%	1.3	1	1.2
Cadmium, Total	µg/L	18	89%	1.3	1	0.85
Cadmium, Dissolved	µg/L	15	73%	0.72	0.6	0.85
Chromium, Total	µg/L	18	100%	9.5	5	1.3
Chromium, Dissolved	µg/L	15	93%	3.1	2.3	0.68
Copper, Total	µg/L	18	100%	28.6	21.5	0.76
Copper, Dissolved	µg/L	15	100%	14.6	13	0.65
Lead, Total	µg/L	18	100%	25.8	23.5	0.78
Lead, Dissolved	µg/L	15	93%	10.7	9.7	1.1
Mercury, Total	µg/L	15	27%	0.14	0.049	1.9
Mercury, Dissolved	µg/L	5	40%	ID	ID	ID
Nickel, Total	µg/L	18	83%	20.3	20.5	0.70
Nickel, Dissolved	µg/L	15	93%	16.1	19	0.61
Selenium, Total	µg/L	17	47%	0.72	0.48	0.73
Selenium, Dissolved	µg/L	14	21%	0.68	0.57	0.43
Silver, Total	µg/L	17	59%	2.26	0.2	2.1
Silver, Dissolved	µg/L	14	43%	0.20	0.073	1.1
Zinc, Total	µg/L	18	100%	168	144	0.73
Zinc, Dissolved	µg/L	15	100%	55.6	40	0.73
EPA 625 [4]						
1-Methylnaphthalene	ng/L	3	33%	ID	ID	ID
1-Methylphenanthrene	ng/L	2	100%	151	151	1.3

Table 9 - 5
Summary Statistics for Detected Constituents at R-1, Swan Street (1993-1998)1

Parameter	*Units*	*# Samples*	*% Detected*	*Mean*	*Median*	*Coefficient of Variation*
2-Methylnaphthalene	ng/L	10	10%	ID	ID	ID
Acenaphthylene	ng/L	17	12%	ID	ID	ID
Benz(a)anthracene	ng/L	17	6%	ID	ID	ID
Benzo(a)pyrene	ng/L	17	6%	ID	ID	ID
Benzo(b)fluoranthene	ng/L	17	12%	ID	ID	ID
Benzo(e)pyrene	ng/L	2	100%	ID	ID	ID
Benzo(g,h,i)perylene	ng/L	17	6%	ID	ID	ID
Benzo(k)fluoranthene	ng/L	17	12%	ID	ID	ID
Chrysene	ng/L	17	12%	ID	ID	ID
Dibenzo(a,h)anthracene	ng/L	17	6%	ID	ID	ID
Fluoranthene	ng/L	17	12%	ID	ID	ID
Fluorene	ng/L	17	6%	ID	ID	ID
Indeno(1,2,3-c,d)pyrene	ng/L	17	12%	ID	ID	ID
Naphthalene	ng/L	17	6%	ID	ID	ID
Phenanthrene	ng/L	17	12%	ID	ID	ID
Pyrene	ng/L	17	12%	ID	ID	ID
bis(2-ethylhexyl)phthalate	ng/L	17	12%	ID	ID	ID
Butyl benzyl phthalate	ng/L	17	12%	ID	ID	ID
Di-n-octyl phthalate	ng/L	17	12%	ID	ID	ID
Dibutyl phthalate	ng/L	17	12%	ID	ID	ID
Diethyl phthalate	ng/L	17	12%	ID	ID	ID
Dimethyl phthalate	ng/L	17	12%	ID	ID	ID
EPA 8080 [4]						
2,4'-DDE	ng/L	2	50%	ID	ID	ID
2,4'-DDT	ng/L	2	50%	ID	ID	ID
4,4' - DDD	ng/L	6	17%	ID	ID	ID
4,4' - DDE	ng/L	6	33%	ID	ID	ID
4,4' - DDT	ng/L	6	17%	ID	ID	ID
gamma-BHC	ng/L	6	17%	ID	ID	ID
EPA 8140						
Diazinon	µg/L	4	25%	ID	ID	ID

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.
4 Variations in number of sample results from differences in constituents reported by the various laboratories used during the permit term.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 6
Summary Statistics for Detected Constituents at R-2, Lawrence Way (1993-1996)1

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	13	77%	17.8	9	1.1
COD	mg/L	12	100%	117	67	1.2
Oil and Grease	mg/L	13	62%	4.7	3	0.69
TRPH	mg/L	3	100%	3.0	2	0.68
Total Organic Carbon	mg/L	7	100%	36.3	13	1.2
Conductivity	umho/cm	8	100%	82.5	80	0.41
pH	pH units	11	100%	6.9	6.9	0.05
Total Dissolved Solids	mg/L	13	100%	66	48	0.79
Total Suspended Solids	mg/L	13	100%	89	81	0.54
Hardness	mg/L	13	100%	26.6	22	0.52
Nutrients						
Ammonia-Nitrogen	mg/L	12	83%	0.35	0.3	1.43
Kjeldahl-Nitrogen	mg/L	12	100%	3.0	2.4	0.58
Nitrate Nitrogen	mg/L	12	100%	0.76	0.44	1.1
Nitrite Nitrogen	mg/L	5	100%	0.03	0.018	1.1
Nitrogen, Total	mg/L	1	100%	ID	ID	ID
Phosphorus, Total	mg/L	12	100%	0.51	0.44	0.38
Phosphorus, Dissolved	mg/L	12	100%	0.42	0.36	0.37
Bacteriological[2]						
Total Coliform	MPN/100ml	7	100%	80,000	90,000	0.54
Fecal Coliform	MPN/100ml	13	100%	11,700	9000	0.84
Fecal Streptococcus	MPN/100ml	13	100%	43,700	17,000	1.1
Metals						
Antimony, Total	µg/L	4	75%	10.2	7.5	0.88
Beryllium	µg/L	4	25%	ID	ID	ID
Thallium, Total	µg/L	4	50%	ID	ID	ID
Arsenic, Total	µg/L	12	83%	1.6	1.7	0.45
Arsenic, Dissolved	µg/L	8	75%	0.97	1	0.14
Cadmium, Total	µg/L	13	85%	0.90	0.8	0.83
Cadmium, Dissolved	µg/L	9	89%	0.66	0.4	1.0
Chromium, Total	µg/L	13	100%	5.0	4	0.63
Chromium, Dissolved	µg/L	9	100%	3.0	2.7	0.76
Copper, Total	µg/L	13	100%	17.2	15	0.78
Copper, Dissolved	µg/L	9	100%	11.3	10	0.47
Lead, Total	µg/L	13	100%	13.8	11	0.91
Lead, Dissolved	µg/L	9	100%	6.6	3.3	0.95
Mercury, Total	µg/L	14	29%	0.36	0.21	0.78
Nickel, Total	µg/L	13	69%	14.0	16	0.89
Nickel, Dissolved	µg/L	9	89%	13.0	10	0.91
Selenium, Total	µg/L	12	17%	ID	ID	ID
Selenium, Dissolved	µg/L	8	13%	ID	ID	ID
Silver, Total	µg/L	12	50%	0.94	0.28	1.3
Silver, Dissolved	µg/L	8	25%	ID	ID	ID
Zinc, Total	µg/L	13	100%	88.0	79	0.73
Zinc, Dissolved	µg/L	9	100%	41.6	37	0.67

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.

2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.

ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 7
Summary Statistics for Detected Constituents at I-1, Via Pescador (1993-1996) 1

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	14	86%	29.4	9.5	1.9
COD	mg/L	14	100%	111	73.5	1.4
Oil and Grease	mg/L	14	50%	2.5	2.1	0.47
TRPH	mg/L	9	44%	0.91	0.13	1.8
Total Organic Carbon	mg/L	7	86%	35.6	14	1.7
Conductivity	umho/cm	10	100%	119	66.5	1.2
pH	pH units	13	100%	6.9	6.9	0.07
Total Dissolved Solids	mg/L	14	100%	67.3	53	0.56
Total Suspended Solids	mg/L	14	100%	82.4	71.5	0.47
Hardness	mg/L	14	100%	26.2	18.5	0.81
Nutrients						
Ammonia-Nitrogen	mg/L	14	71%	0.38	0.2	0.96
Kjeldahl-Nitrogen	mg/L	14	100%	2.5	2.3	0.57
Nitrate Nitrogen	mg/L	14	100%	1.7	0.62	1.8
Nitrite Nitrogen	mg/L	4	100%	0.02	0.014	1.0
Nitrogen, Total	mg/L	1	100%	ID	ID	ID
Phosphorus, Total	mg/L	14	100%	0.40	0.39	0.59
Phosphorus, Dissolved	mg/L	14	100%	0.24	0.25	0.34
Bacteriological[2]						
Total Coliform	MPN/100ml	7	100%	11,600	8000	0.98
Fecal Coliform	MPN/100ml	14	93%	670	110	2.0
Fecal Streptococcus	MPN/100ml	14	100%	7890	2350	1.3
Metals						
Antimony, Total	µg/L	3	67%	ID	ID	ID
Thallium, Total	µg/L	3	33%	ID	ID	ID
Arsenic, Total	µg/L	13	92%	2.1	2	0.49
Arsenic, Dissolved	µg/L	10	70%	1.2	0.95	0.44
Cadmium, Total	µg/L	14	100%	1.2	1	0.81
Cadmium, Dissolved	µg/L	11	91%	0.81	0.6	0.77
Chromium, Total	µg/L	14	93%	8.4	7.7	0.66
Chromium, Dissolved	µg/L	14	93%	4.2	3.5	0.72
Copper, Total	µg/L	14	100%	16.4	14	0.65
Copper, Dissolved	µg/L	11	100%	10.5	11	0.38
Lead, Total	µg/L	14	100%	10.8	7.6	0.97
Lead, Dissolved	µg/L	11	91%	7.7	5	1.2
Mercury, Total	µg/L	13	15%	ID	ID	ID
Nickel, Total	µg/L	14	93%	17.1	18.5	0.66

Table 9 - 7
Summary Statistics for Detected Constituents at I-1, Via Pescador (1993-1996) 1

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Nickel, Dissolved	µg/L	11	91%	14.5	15	0.71
Selenium, Total	µg/L	13	8%	ID	ID	ID
Silver, Total	µg/L	13	62%	0.78	0.2	1.2
Silver, Total	µg/L	10	30%	0.27	0.11	1.3
Zinc, Total	µg/L	14	100%	101	100	0.55
Zinc, Dissolved	µg/L	11	100%	53.7	53	0.55
EPA 625						
Acenaphthylene	ng/L	13	8%	ID	ID	ID
Fluorene	ng/L	13	8%	ID	ID	ID
Phenanthrene	ng/L	13	8%	ID	ID	ID
Pyrene	ng/L	13	8%	ID	ID	ID
EPA 8150						
2,4,5-TP (Silvex)	µg/L	2	50%	ID	ID	ID

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 For microbiological counts reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 8
Summary Statistics for Detected Constituents at I-2, Ortega St. (1993-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	19	74%	18.0	9	1.5
COD	mg/L	16	100%	96.9	81.5	0.68
Oil and Grease	mg/L	17	76%	3.4	3	0.54
TRPH	mg/L	12	67%	0.91	0.7	0.71
Total Organic Carbon	mg/L	11	100%	24.7	11	0.94
Conductivity	umho/cm	13	100%	189	116	1.3
pH	pH units	17	100%	7.2	7.3	0.08
Total Dissolved Solids	mg/L	19	100%	148	92	0.88
Total Suspended Solids	mg/L	19	100%	436	249	1.4
Hardness	mg/L	19	100%	64.5	43	0.88
Chloride	mg/L	2	100%	23.5	23.5	1.2
Nutrients						
Ammonia-Nitrogen	mg/L	18	83%	0.53	0.35	0.89
Kjeldahl-Nitrogen	mg/L	18	100%	3.1	2.25	0.69
Nitrate Nitrogen	mg/L	18	100%	1.1	0.96	0.67
Nitrite Nitrogen	mg/L	5	100%	0.03	0.028	0.56
Nitrogen, Total	mg/L	1	100%	ID	ID	ID
Orthophosphate-P	mg/L	2	100%	0.33	0.33	0.76
Phosphorus, Total	mg/L	18	100%	0.63	0.50	0.61
Phosphorus, Dissolved	mg/L	18	100%	0.49	0.39	0.70
Bacteriological[2]						
Total Coliform	MPN/100ml	11	100%	39,300	24,000	1.1
Fecal Coliform	MPN/100ml	18	100%	13,500	2300	2.7
Fecal Streptococcus	MPN/100ml	18	100%	20,200	13,000	1.3
Metals[3]						
Antimony, Total	µg/L	4	75%	18.9	18	0.84
Thallium, Total	µg/L	4	75%	10.6	6	1.2
Arsenic, Total	µg/L	18	100%	5.6	4	0.75
Arsenic, Dissolved	µg/L	14	86%	2.1	2	0.40
Cadmium, Total	µg/L	19	95%	1.9	1.2	0.95
Cadmium, Dissolved	µg/L	15	80%	0.87	0.6	0.78
Chromium, Total	µg/L	19	100%	16.3	10.2	1.2
Chromium, Dissolved	µg/L	15	100%	4.8	3	0.84
Copper, Total	µg/L	19	100%	36.6	26	0.89
Copper, Dissolved	µg/L	15	100%	17.5	14	0.69
Lead, Total	µg/L	19	100%	17.2	12	0.96
Lead, Dissolved	µg/L	15	80%	7.3	5	1.0
Mercury, Total	µg/L	18	22%	0.24	0.1	1.8
Mercury, Dissolved	µg/L	5	40%	ID	ID	ID
Nickel, Total	µg/L	19	95%	31.8	28	0.84
Nickel, Dissolved	µg/L	15	93%	18.1	18	0.63
Selenium, Total	µg/L	18	56%	1.1	0.65	0.78
Selenium, Dissolved	µg/L	14	36%	0.82	0.5	0.71
Silver, Total	µg/L	18	67%	0.95	0.2	1.5
Silver, Dissolved	µg/L	14	43%	0.23	0.083	1.2
Zinc, Total	µg/L	19	100%	205	147	0.81
Zinc, Dissolved	µg/L	15	100%	67.3	45	0.93
EPA 625[4]						
1-Methylnaphthalene	ng/L	3	33%	ID	ID	ID
1-Methylphenanthrene	ng/L	2	50%	ID	ID	ID

Table 9 - 8
Summary Statistics for Detected Constituents at I-2, Ortega St. (1993-1998)1

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
2,6-Dimethylnaphthalene	ng/L	2	50%	ID	ID	ID
2-Methylnaphthalene	ng/L	10	10%	ID	ID	ID
Benz(a)anthracene	ng/L	17	12%	ID	ID	ID
Benzo(a)pyrene	ng/L	17	6%	ID	ID	ID
Benzo(b)fluoranthene	ng/L	17	12%	ID	ID	ID
Benzo(e)pyrene	ng/L	2	50%	ID	ID	ID
Benzo(g,h,i)perylene	ng/L	17	6%	ID	ID	ID
Benzo(k)fluoranthene	ng/L	17	6%	ID	ID	ID
Chrysene	ng/L	17	12%	ID	ID	ID
Dibenzo(a,h)anthracene	ng/L	17	6%	ID	ID	ID
Fluoranthene	ng/L	17	12%	ID	ID	ID
Fluorene	ng/L	17	6%	ID	ID	ID
Indeno(1,2,3-c,d)pyrene	ng/L	17	6%	ID	ID	ID
Naphthalene	ng/L	17	6%	ID	ID	ID
Perylene	ng/L	2	50%	ID	ID	ID
Phenanthrene	ng/L	17	12%	ID	ID	ID
Pyrene	ng/L	17	12%	ID	ID	ID
bis(2-ethylhexyl)phthalate	ng/L	17	12%	ID	ID	ID
Butyl benzyl phthalate	ng/L	17	12%	ID	ID	ID
Di-n-octyl phthalate	ng/L	17	12%	ID	ID	ID
Dibutyl phthalate	ng/L	17	12%	ID	ID	ID
Diethyl phthalate	ng/L	17	12%	ID	ID	ID
Dimethyl phthalate	ng/L	17	12%	ID	ID	ID
EPA 8080[4]						
2,4'-DDD	ng/L	2	50%	ID	ID	ID
2,4'-DDE	ng/L	2	50%	ID	ID	ID
2,4'-DDT	ng/L	2	50%	ID	ID	ID
4,4' - DDD	ng/L	6	33%	ID	ID	ID
4,4' - DDE	ng/L	6	67%	58.2	40	0.80
4,4' - DDT	ng/L	6	17%	ID	ID	ID
gamma-BHC	ng/L	6	33%	ID	ID	ID
EPA 8140						
Dimethoate	µg/L	2	50%	ID	ID	ID
EPA 8150						
Methylene Chloride	µg/L	7	14%	ID	ID	ID
2,4,5-TP (Silvex)	µg/L	2	50%	ID	ID	ID

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.

2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.

3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.

4 Variations in number of sample results from differences in constituents reported by the various laboratories used during the permit term.

ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

9.2.3.2 Bioassay Results

In addition to the chemical analyses summarized above, toxicity testing was conducted at the discharge characterization sites. Starting in 1997/98, when sufficient acute toxicity was observed in samples (less than 50% survival after 24 hours), a Toxicity Identification Evaluation (TIE) was initiated. Tables 9-9 through 9-10 (shown below) summarize the results of the *Ceriodaphnia* toxicity testing and TIEs conducted.

Table 9 - 9
Survival Rates of Ceriodaphnia for Discharge Characterization Monitoring Sites

	Percent Survival of Ceriodaphnia (LC50)					
Storm Event Date	**A-1**	**C-1**	**R-1**	**R-2**	**I-1**	**I-2**
1/31/96 [1]	NS	100%	NS	100%	20%	NS
2/19/96 [1]	NS	100%	NS	NS	NS	NS
11/20-22/96 [1]	0%	NS	0%	NS	NS	80%
11/10/97	NS	NS	75%	NS	NS	100%
11/26/97	25%	NS	NS	NS	NS	NS
12/5/97	25%	NS	NS	NS	NS	NS
3/24/98	12.5%	NS	100%	NS	NS	100%

1 Data reported as EC50 for these storm events.
NS Toxicity samples not collected at this site during the listed monitoring event.

TIEs were conducted on samples collected during the first event sampled in 1997/98. The primary toxicant classes identified as causing toxicity and any other classes contributing to the toxicity of each sample are summarized in Table 9-10 (shown below).

Table 9 - 10
Summary of TIE Results

Sample Site	Primary Toxicant Class	Classes Possibly Contributing to Toxicity
A-1 (11/26/97)	Non-polar organic compounds [1]	None identified
R-1 (11/10/97)	Organophosphate pesticides [1]	Non-polar organic compounds

1 Adjustment of the sample pH indicates that the toxicant is degraded under basic conditions.

9.2.3.3 Comparison of Ventura County Mean Metals and Phosphorus Results to Other California Communities

Ventura County discharge characterization data were compared to runoff quality data reported in studies of other California communities and the Nationwide Urban Runoff Program (NURP). In previous annual reports median values from Ventura County were compared to values from Sacramento County, San Bernardino County, the City of Stockton, NURP, the Bay Area Stormwater Management Agencies Association (BASMAA, 1996), the Alameda County Flood Control and Water Conservation District (ACFCWCD, 1991), and the Santa Clara Valley Water District (SCVWD, 1991) (VCSQMP, 1997). In this report, updated median values for Ventura County were compared to the above data in Table 9-11 (on page 9-18) for industrial land use and Table 9-12 (on page 9-19) for residential land use.

In general, the Ventura County mean and median EMCs were similar or lower than values from other California communities and NURP. Total suspended solids and total and dissolved phosphorus were the only constituents found to have consistently higher EMCs than other communities. Ventura County's total cadmium, total copper, residential total lead, and industrial total nickel EMCs were higher than a few communities, but overall compared well with other communities.

Table 9 - 11
Comparison of Industrial Land Use EMCs: Ventura County (1993-98)[1] vs. California Communities

CONSTITUENT	UNITS	Ventura County 1993-98 Mean EMC	Bay Area Community Mean EMCs			Ventura County 1993-98 Median EMC	NURP Median EMC	Other California Community Median EMCs		
			BASMAA[2]	Alameda Loads Assessment	Santa Clara Loads Assessment			San Bernardino County[3]	Sacramento County[4]	City of Stockton[5]
Total Cadmium	µg/L	1.6	1.72	1.4	5.9	1.0	2.0[6]	NA	0.68	0.62
Total Chromium	µg/L	13.0	22*	20	39.1	9.3	NA	NA	NA	NA
Total Copper	µg/L	28.0	45*	44	52.9	20	29	33	18.8	15.7
Total Lead	µg/L	14.5	143	77	133.5	10	23[7]	22	25	13.5
Total Nickel	µg/L	25.5	34	13	54	22	NA	NA	NA	NA
Total Zinc	µg/L	161	358	367	1,471	119	226	210	191	139
Total Suspended Solids	mg/L	286	113	114	152	111	69	180	45.4	222
Total Phosphorus	mg/L	0.53	NA	NA	NA	0.44	0.20	0.48	0.22	0.43
Dissolved Phosphorus	mg/L	0.38	NA	NA	NA	0.31	0.08	0.14	NA	0.19

Notes:

1 Combined datasets for I-1 and I-2. Previous analysis has demonstrated that data from different sites of the same predominant land use category are compatible for combination into one data set (VCSQMP, 1996).

2 BASMAA values were calculated using a multiple variable linear regression to estimate land use-specific EMCs, while Ventura County means are averages calculated directly from the data (1993-98).

3 County of San Bernardino, et. al. "1997-98 Annual Report." Medians derived from 19 storm events between 2/94 and 3/98.

4 SCWA (1995), "Sacramento Stormwater Management Program, Report of Program Effectiveness." Medians derived from nine storm events monitored between 9/89 and 9/94.

5 CDM, et. al. (1993), "City of Stockton Part 2 NPDES Storm Water Permit Application." Medians derived from six storm events monitored between 10/92 and 9/94.

6 NURP EMC values not available. Representative values taken from WMM documentation (CDM, 1992).

7 Representative NURP Lead EMC not available for lead-free fuel time period. Median taken from Walker, 1990.

"NA" Indicates that value was not available from data source referenced.

* BASMAA results suggest that land use is not a significant factor in determining the concentration of this constituent in stormwater runoff. Instead, a station average-based "Urban area" value is used.

Table 9 - 12
Comparison of Residential Land Use EMCs: Ventura County (1993-98)[1] vs. California Communities

CONSTITUENT	UNITS	Ventura County 1993-98 Mean EMC	Bay Area Community Mean EMCs			Ventura County 1993-98 Median EMC	NURP Median EMC	Other California Community Median EMCs		
			BASMAA[2]	Alameda Loads Assessment	Santa Clara Loads Assessment			San Bernardino County Median[3]	Sacramento County Median[4]	City of Stockton Median[5]
Total Cadmium	µg/L	1.15	1.66	0.85	1.7	0.90	2.0[6]	NA	0.4	0.34
Total Chromium	µg/L	7.6	22*	14	21.1	5.0	NA	23	NA	NA
Total Copper	µg/L	25.0	45*	31	50.5	16.0	33	27	11	11.3
Total Lead	µg/L	23.8	51.7	73	60.8	14.0	23[7]	12	17	15
Total Nickel	µg/L	17.7	35.5	20	40.9	18.0	NA	NA	NA	NA
Total Zinc	µg/L	134	188	246	251	99	135	130	100	119
Total Suspended Solids	mg/L	129	85.9	192	76	118	101	120	40.4	53
Total Phosphorus	mg/L	0.68	NA	NA	NA	0.57	0.38	0.37	0.28	0.37
Dissolved Phosphorus	mg/L	0.44	NA	NA	NA	0.39	0.14	NA	NA	0.22

Notes:

1 Combined datasets for R-1 and R-2. Previous analysis has demonstrated that data from different sites of the same predominant land use category are compatible for combination into one data set (VCSQMP, 1996).

2 BASMAA values were calculated using a multiple variable linear regression to estimate land use-specific EMCs, while Ventura County means are averages calculated directly from the data (1993-98).

3 County of San Bernardino, et. al. "1997-98 Annual Report." Medians derived from 19 storm events between 2/94 and 3/98.

4 SCWA (1995), "Sacramento Stormwater Management Program, Report of Program Effectiveness." Medians derived from nine storm events monitored between 9/89 and 9/94.

5 CDM, et. al. (1993), "City of Stockton Part 2 NPDES Storm Water Permit Application." Medians derived from six storm events monitored between 10/92 and 9/94.

6 NURP EMC values not available. Representative values taken from WMM documentation (CDM, 1992).

7 Representative NURP Lead EMC not available for lead-free fuel time period. Median taken from Walker, 1990.

"NA" Indicates that value was not available from data source referenced.

* BASMAA results suggest that land use is not a significant factor in determining the concentration of this constituent in stormwater runoff. Instead, a station average-based "Urban area" value is used.

9.2.4 Proposed Monitoring Effort

The proposed discharge characterization and outfall monitoring effort reflects a shift from characterizing land use monitoring sites to focusing on sites where additional information is needed and continuing toxicity monitoring. Land use characterization for residential, industrial, and commercial areas has been conducted and sufficient data collected to adequately characterize the sites and to justify a reduction in monitoring at the remaining sites (R-1 and I-2). The proposed discharge characterization monitoring will include continued monitoring at the agricultural discharge characterization site on a yearly basis and monitoring at the residential and industrial characterization sites during three storms over the course of the permit term. Reduced discharge characterization monitoring will allow the management programs to redirect resources to other monitoring activities, with an emphasis on watershed monitoring.

Since 1993, over twenty storms have been captured at both the residential, Swan Street (R-1) and industrial, Via Ortega (I-2) characterization sites. Additionally, fourteen storms were captured at the other residential (R-2) and industrial (I-1) sites before monitoring was discontinued. Data from the monitoring sites with similar land uses were determined to be similar based on a statistical analysis conducted previously (VCSQMP, 1996). As a result, between 25 and 35 data points have been collected for most constituents (except toxicity) to characterize both residential and industrial discharges. Hence, the R-1 and R-2 sites will only be monitored for three storms during this permit term.

Toxicity samples have been collected at R-1 and I-2 during three events, and Toxicity Identification Evaluations (TIEs) were conducted on samples collected in 1997/98 and 1998/99. To confirm these toxicity results and sources of toxicity, toxicity samples will be collected from each of three discharge characterization sites during approximately one storm per year until baseline information has been collected. If toxicity is observed in the collected samples, TIEs will be conducted on the samples showing toxicity to identify potential toxicants in the sample. Additional investigation into the sources of the toxicity will be conducted if necessary to isolate the toxicant(s).

Discharge characterization monitoring will continue to be conducted at site (A-1) for a maximum of five more storms during the permit term to obtain a similar level of baseline data as obtained for the residential and industrial land use sites. The agricultural site was added during 1994/95, two years after monitoring began at R-1 and I-2. Monitoring this site during this permit term will ensure that sufficient data is collected to adequately characterize agricultural discharges from this site. At least one storm event will be monitored each year, and storm events will be selected to monitor an approximately equal number of first flush/early season storms, mid-season storms, and late season storms over the permit term.

The proposed discharge characterization monitoring is summarized in Table 9-13 (shown below).

Table 9 - 13
Proposed Discharge Characterization Monitoring[4]

Monitoring Station	***Minimum Number Events (per year)***	***Sample Type***	***Constituents[1]***
A-1, Wood Road	1[2]	Automated composite and grabs	Metals Organics Conventional Inorganics Microbiological Toxicity and TIEs[3]
R-1, Swan St.[3]	3 per Permit Term	Automated composite and grabs	Metals Organics Conventional Inorganics Microbiological Toxicity and TIEs[3]
I-2, Ortega St.[3]	3 per Permit Term	Automated composite and grabs	Metals Organics Conventional Inorganics Microbiological Toxicity and TIEs[3]

1 The list of specific constituents, analytical methods, detection limits, and holding times is included in Appendix G-1
2 A maximum of 5 events will be monitored during the permit term.
3 Toxicity monitoring will occur during at least one storm per year until baseline information has been collected, and then be discontinued. A Toxicity Identification Evaluation (TIE) shall be performed when acute toxicity results are greater than 1 TUa. Freshwater acute toxicity tests shall be conducted on the most sensitive of the two species - Fathead minnow and Ceriodaphnia.
4 Detailed monitoring procedures will be as described in the *Ventura Countywide Stormwater Monitoring Program: Standard Operating Procedures 2000-2005 Stormwater Monitoring* (SOPs), which is included as Appendix G of this report.

9.3 Receiving Water and Watershed Monitoring

Receiving water monitoring conducted during the first permit term consisted primarily of wet weather sample collection and analysis from receiving water sites. The following sections describe the monitoring site locations, storm events captured, water quality results, and the proposed receiving water monitoring plan.

9.3.1 Receiving Water Assessments

During the first permit term, the receiving water quality assessments conducted in Ventura County were compiled and evaluated to help direct the Program. Since then, updated assessments of receiving water quality conducted by Regional Water Quality Control Board (RWQCB) for the Los Angeles Region have been used as background information for monitoring activities and related work. Most recently, the 1998 Clean Water Act Section 303 (d) list was used in the identification and prioritization of pollutants of concern for the Program. Receiving water assessments are reviewed and used in the Program to help prioritize their activities.

9.3.2 Monitoring Site Descriptions

As part of the Ventura Countywide NPDES Stormwater Permit, stormwater monitoring of four receiving water sites, and three special study receiving water sites has occurred during various years of the permit term. The site locations and characteristics are described in the following sections.

9.3.2.1 Receiving Water Sites

Monitoring of receiving water was accomplished at four different receiving water sites (as shown in Figure 9-1, on page 9-4) over the course of the first permit term. The site characteristics for the four monitoring stations are summarized in Table 9-14 (shown below).

Table 9 - 14
Receiving Water Monitoring Location Characteristics

Station Code	*Location (Waterbody)*	*Land Uses*	*Percent Developed*	*Watershed Area (acres)*	*Rain Gage*
W-1	Heywood Street between Ettinger Road and Morley Street (Dry Canyon)	Residential (downstream)	48%	2,307	Santa Susana
W-2	Alamo Street between Wanda Avenue and Jasmine Glen Avenue (Dry Canyon)	Undeveloped (upstream)	4%	1,237	Santa Susana
W-3	La Vista Avenue south of Center Road (Revolon Slough)	Agricultural/ Open Space	<2%	752	Somis Deboni
W-4	Revolon Slough at Wood Road (Revolon Slough)	Mixed Use	20%	28,800	Oxnard Airport

The Alamo Street site (W-2) is near the northern city limits of Simi Valley at the Alamo Street overcrossing. The vast majority of the area above this monitoring site is undeveloped. The Heywood Street site (W-1) is just above the confluence of Dry Creek with Arroyo Simi at the Heywood Street overcrossing. Urban stormwater drains to this site from a primarily residential area containing some commercial land use area. This drainage basin composition is reflective of the community at large. The La Vista Avenue site (W-3) is in the upper Revolon Slough watershed, which consists primarily of agricultural and open space land uses. The W-1, W-2, and W-3 sites were equipped with automated monitoring equipment. The Revolon Slough site (W-4) is located in Revolon Slough at the Wood Road bridge in a large mixed use area. Samples are collected there as manual grab samples. This site is also monitored monthly by VCFCD in conjunction with the Calleguas Creek Watershed Coordinated Monitoring Program (CMP).

9.3.2.2 Malibu Creek Watershed Receiving Water Sites

During the 1996/97 and 1997/98 monitoring years, a two-year special study was conducted to investigate the quality of runoff entering Malibu Creek from drainage areas located in Ventura County. The upper Malibu Creek watershed monitoring stations are located on tributaries to Malibu Creek on the Ventura County side of the Ventura-Los Angeles County line as shown in Figure 9-1 on page 9-4. The monitoring locations and the watershed characteristics of the drainage areas to the creeks are summarized in Table 9-15 (shown below).

Table 9 - 15
Malibu Creek Watershed Monitoring Location Characteristics

Station Code	*Location*	*Land Uses*	*Percent Developed*	*Watershed Area (acres)*	*Rain Gage*
LC-1	Lindero Canyon Creek at Ventura-Los Angeles County Line	Undeveloped/ Residential	41.5 %	2,000	Simi Hills - #249
MC-1	Medea Canyon Creek at Ventura-Los Angeles County Line	Undeveloped/ Residential	40%	2,130	Simi Hills - #249
LV-1	Las Virgenes Creek at Ventura-Los Angeles County Line	Undeveloped	<2%	4,683	Simi Hills - #249

Two of the grab sample monitoring sites, Lindero Canyon Creek and Medea Canyon Creek, eventually flow to Malibu Lake and then to Malibu Creek in Los Angeles County. The land uses within these sub-basins are residential and undeveloped. The third grab sample monitoring site is located on Las Virgenes Canyon Creek in Ventura County, which joins Malibu Creek south of Malibu Lake. This watershed sub-basin is undeveloped and is significantly larger than the other two watershed areas.

9.3.3 Storm Events Monitored

This section summarizes the monitoring events captured at the receiving water monitoring sites since 1994 and describes the locations monitored during each year of the first permit.

9.3.3.1 Receiving Water Sites

Monitoring conducted at each of the four receiving water sites is summarized in Table 9-16 (shown below).

Table 9 - 16
Summary of Receiving Water Monitoring Dates

Monitoring Station	1994/95	1995/96	1996/97	1997/98
W-1, Heywood St.	2/13/95 3/21/95	1/21/96 1/31/96 2/19/96 3/4/96	10/29/96 11/20/96 12/9/96	NS
W-2, Alamo St.	2/13/95 3/21/95	1/21/96 1/31/96 2/19/96 3/4/96	10/29/96 11/20/96 12/9/96	NS
W-3, La Vista Rd.	NS	NS	1/14/97	11/26/97 12/5/97 1/9/98 1/29/98 3/24/98
W-4, Revolon Slough	NS	NS	NS	12/5/97 1/29/98 3/24/98

NS Monitoring location not sampled during the permit year.

During the 1996/97 monitoring season, it was concluded that low flow conditions at W-1 and W-2 necessitated moving the receiving water monitoring locations. Therefore, during 1996/97, two new receiving water sites were selected. Automated sampling equipment was installed at W-3, La Vista Rd., prior to the completion of the 1996/97 monitoring season and one storm was monitored. W-4, Revolon Slough at Wood Rd. was added during 1997/98 to coordinate with and in anticipation of the Calleguas Creek Watershed CMP.

9.3.3.2 Malibu Creek Watershed Monitoring Sites

The three Malibu Creek watershed sites were monitored as part of a two-year special study in 1996/97 and 1997/98. The storm events monitored are summarized in Table 9-17 (shown below).

Table 9 - 17
Summary of Malibu Creek Watershed Monitoring Dates

Monitoring Station	*1996/97*	*1997/98*
LC-1, Lindero Canyon	9/10/96 10/29/96 4/28/97 8/28/97	11/10/97 1/29/98 5/5/98 8/4/98
LV-1, Las Virgenes Creek	10/29/96 4/28/97	12/6/97 5/5/98
MC-1, Medea Canyon	9/10/96 10/29/96 4/28/97 8/28/97	11/10/97 1/29/98 5/5/98 8/4/98

9.3.4 Monitoring Results

Tables 9-18 through 9-21 (on pages 9-26 through 9-31) summarize the water quality results for detected constituents at the receiving water and Malibu Creek Watershed monitoring sites.

9.3.4.1 Receiving Water Sites

Table 9 - 18
Summary Statistics for Detected Constituents at W-1, Heywood St. (1994-1997)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	5	100%	18.2	11	1.0
COD	mg/L	5	100%	91.8	87	0.39
Oil and Grease	mg/L	9	44%	1.7	0.92	1.1
TRPH	mg/L	7	100%	2.3	2.3	0.67
Total Organic Carbon	mg/L	4	100%	6.8	5.7	0.52
Conductivity	umho/cm	8	100%	105	111	0.25
pH	pH units	8	100%	6.96	6.95	0.02
Total Dissolved Solids	mg/L	5	100%	56.0	64	0.32
Total Suspended Solids	mg/L	5	100%	172	150	0.55
Hardness	mg/L	5	100%	28.4	28	0.23
Nutrients						
Ammonia-Nitrogen	mg/L	5	100%	0.54	0.4	0.52
Kjeldahl-Nitrogen	mg/L	5	100%	2.4	2	0.49
Nitrate Nitrogen	mg/L	5	100%	0.75	0.63	0.73
Phosphorus, Total	mg/L	5	100%	0.48	0.43	0.27
Phosphorus, Dissolved	mg/L	5	100%	0.32	0.32	0.27
Bacteriological[2]						
Total Coliform	MPN/100ml	8	100%	133,800	160,000	0.38
Fecal Coliform	MPN/100ml	8	100%	32,600	24,000	0.90
Fecal Streptococcus	MPN/100ml	7	100%	90,300	90,000	0.63
Metals[3]						
Arsenic, Total	µg/L	3	100%	2.2	2.1	0.14
Arsenic, Dissolved	µg/L	3	100%	1.8	2	0.26
Cadmium, Total	µg/L	3	100%	1.5	1.4	0.75
Cadmium, Dissolved	µg/L	3	67%	ID	ID	ID
Chromium, Total	µg/L	3	100%	10.8	10.9	0.53
Chromium, Dissolved	µg/L	3	100%	2.2	2.5	0.42
Copper, Total	µg/L	3	100%	32.7	30	0.49
Copper, Dissolved	µg/L	3	100%	10.3	10	0.06
Lead, Total	µg/L	3	100%	13.0	13	0.12
Lead, Dissolved	µg/L	3	100%	3.7	3.5	0.76
Mercury, Total	µg/L	6	17%	ID	ID	ID
Nickel, Total	µg/L	3	100%	39.3	38	0.36
Nickel, Dissolved	µg/L	3	100%	27.3	22	0.37
Selenium, Total	µg/L	3	33%	ID	ID	ID
Silver, Total	µg/L	3	33%	ID	ID	ID
Silver, Dissolved	µg/L	3	33%	ID	ID	ID
Zinc, Total	µg/L	3	100%	137	161	0.33
Zinc, Dissolved	µg/L	3	100%	46.0	39	0.26
EPA 625						
Bis(2-ethylhexyl)phthalate	ng/L	9	33%	7280	4260	0.74

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.

2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.

3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.

ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 19
Summary Statistics for Detected Constituents at W-2, Alamo St. (1994-1997)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	4	75%	10.1	10	0.36
COD	mg/L	4	100%	73.0	71	0.33
Oil and Grease	mg/L	9	11%	ID	ID	ID
Total Organic Carbon	mg/L	3	100%	9.0	10	0.74
Conductivity	umho/cm	8	100%	198	196	0.33
pH	pH units	8	100%	7.2	7.3	0.03
Total Dissolved Solids	mg/L	4	100%	110	110	0.04
Total Suspended Solids	mg/L	4	100%	872	864	0.52
Hardness	mg/L	4	100%	79.3	79.5	0.06
Nutrients						
Ammonia-Nitrogen	mg/L	4	100%	0.35	0.3	0.55
Kjeldahl-Nitrogen	mg/L	4	100%	6.6	3.9	1.0
Nitrate Nitrogen	mg/L	4	100%	2.0	2.5	0.68
Phosphorus, Total	mg/L	4	100%	0.97	0.92	0.27
Phosphorus, Dissolved	mg/L	4	100%	0.34	0.34	0.32
Bacteriological[2]						
Total Coliform	MPN/100ml	8	100%	147,500	165,000	0.51
Fecal Coliform	MPN/100ml	8	100%	29,300	13,000	1.48
Fecal Streptococcus	MPN/100ml	7	100%	66,600	30,000	0.91
Metals[3]						
Arsenic, Total	µg/L	2	100%	8.7	8.7	0.01
Arsenic, Dissolved	µg/L	2	100%	5.2	5.2	0.40
Cadmium, Total	µg/L	2	100%	0.95	0.95	0.67
Cadmium, Dissolved	µg/L	2	100%	0.85	0.85	0.58
Chromium, Total	µg/L	2	100%	22.2	22.2	0.97
Chromium, Dissolved	µg/L	2	100%	6.8	6.8	0.97
Copper, Total	µg/L	2	100%	65.5	65.5	0.33
Copper, Dissolved	µg/L	2	100%	25.0	25.0	0.74
Lead, Total	µg/L	2	100%	20.3	20.3	0.83
Lead, Dissolved	µg/L	2	100%	8.0	8.0	0.83
Mercury, Total	µg/L	6	33%	ID	ID	ID
Nickel, Total	µg/L	2	100%	52.0	52.0	0.05
Nickel, Dissolved	µg/L	2	100%	35.5	35.5	0.10
Selenium, Total	µg/L	2	100%	0.75	0.75	0.47
Zinc, Total	µg/L	2	100%	164	164	0.11
Zinc, Dissolved	µg/L	2	100%	75.5	75.5	0.23
EPA 625						
Bis(2-ethylhexyl)phthalate	ng/L	9	11%	ID	ID	ID

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 20
Summary Statistics for Detected Constituents at W-3, La Vista Rd. (1997-1998)[1]

Parameter	***Units***	***# Samples***	***% Detected***	***Mean***	***Median***	***Coefficient of Variation***
Conventionals						
BOD	mg/L	5	100%	27.2	14	1.1
COD	mg/L	1	100%	ID	ID	ID
Oil and Grease	mg/L	3	67%	ID	ID	ID
TRPH	mg/L	3	67%	ID	ID	ID
Total Organic Carbon	mg/L	4	100%	16.9	8.8	1.0
Conductivity	umho/cm	4	100%	268	243	0.59
pH	pH units	4	100%	7.7	7.7	0.03
Total Dissolved Solids	mg/L	5	100%	256	242	0.31
Total Suspended Solids	mg/L	5	100%	3730	3240	0.78
Hardness	mg/L	5	100%	171	132	0.56
Chloride	mg/L	5	100%	16.8	14	0.51
Nutrients						
Ammonia-Nitrogen	mg/L	5	60%	0.95	0.6	0.90
Kjeldahl-Nitrogen	mg/L	5	100%	11.0	10.4	0.71
Nitrate Nitrogen	mg/L	5	100%	3.2	3.02	0.42
Orthophosphate-P	mg/L	4	100%	0.50	0.54	0.26
Phosphorus, Total	mg/L	5	100%	2.1	2.0	0.45
Phosphorus, Dissolved	mg/L	5	100%	0.47	0.5	0.30
Bacteriological[2]						
Total Coliform	MPN/100ml	4	100%	147,500	160,000	0.17
Fecal Coliform	MPN/100ml	4	100%	34,3000	37,000	0.55
Fecal Streptococcus	MPN/100ml	4	100%	180,000	160,000	0.22
Metals[3]						
Arsenic, Total	µg/L	4	100%	79.3	80	0.30
Arsenic, Dissolved	µg/L	4	100%	6.8	4.1	1.1
Cadmium, Total	µg/L	4	100%	5.2	4.4	0.61
Cadmium, Dissolved	µg/L	4	75%	2.5	1.7	0.95
Chromium, Total	µg/L	4	100%	220	230	0.13
Chromium, Dissolved	µg/L	4	100%	22.4	18.3	0.81
Copper, Total	µg/L	4	100%	527	547	0.38
Copper, Dissolved	µg/L	4	100%	85.0	55	0.81
Lead, Total	µg/L	4	100%	116	109	0.30
Lead, Dissolved	µg/L	4	100%	20.2	15	0.86
Mercury, Total	µg/L	4	100%	0.28	0.28	0.32
Mercury, Dissolved	µg/L	4	100%	0.01	0.005	0.26
Nickel, Total	µg/L	4	100%	183	176	0.23
Nickel, Dissolved	µg/L	4	75%	23.4	22	0.80
Selenium, Total	µg/L	4	100%	3.4	2.8	0.47
Selenium, Dissolved	µg/L	4	100%	1.1	0.95	0.42
Silver, Total	µg/L	4	50%	ID	ID	ID
Silver, Dissolved	µg/L	4	25%	ID	ID	ID
Zinc, Total	µg/L	4	100%	604	600	0.76
Zinc, Dissolved	µg/L	4	100%	85.5	58	0.79

Table 9 - 20
Summary Statistics for Detected Constituents at W-3, La Vista Rd. (1997-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
EPA 625						
1-Methylphenanthrene	ng/L	4	50%	ID	ID	ID
2,3,5-Trimethlynaphthalene	ng/L	4	25%	ID	ID	ID
Benz(a)anthracene	ng/L	4	25%	ID	ID	ID
Chrysene	ng/L	4	25%	ID	ID	ID
Fluoranthene	ng/L	4	50%	ID	ID	ID
Fluorene	ng/L	4	25%	ID	ID	ID
Phenanthrene	ng/L	4	75%	44.8	33.5	0.82
Pyrene	ng/L	4	25%	ID	ID	ID
1,3-Dichlorobenzene	ng/L	4	25%	ID	ID	ID
bis(2-ethylhexyl)phthalate	ng/L	4	75%	666	229	1.5
Butyl benzyl phthalate	ng/L	4	25%	ID	ID	ID
Di-n-octyl phthalate	ng/L	4	50%	ID	ID	ID
Dibutyl phthalate	ng/L	4	75%	56.5	58.5	0.52
Diethyl phthalate	ng/L	4	75%	68.7	49	1.1
Dimethyl phthalate	ng/L	4	50%	ID	ID	ID
EPA 8080						
2,4'-DDE	ng/L	4	50%	ID	ID	ID
2,4'-DDT	ng/L	4	50%	ID	ID	ID
4,4' - DDD	ng/L	4	100%	19.5	16.5	1.0
4,4' - DDE	ng/L	4	100%	197	176	0.68
4,4' - DDT	ng/L	4	100%	105	117	0.72
Aldrin	ng/L	4	25%	ID	ID	ID
beta-BHC	ng/L	4	25%	ID	ID	ID
gamma-BHC	ng/L	4	25%	ID	ID	ID
EPA 8140						
Chlorpyrifos	µg/L	4	50%	ID	ID	ID
Disulfoton	µg/L	4	25%	ID	ID	ID
EPA 8150						
2,4-D	µg/L	3	100%	9.5	5.6	1.1
Dinoseb (DNBP)	µg/L	3	100%	1.1	1.2	0.69

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 21
Summary Statistics for Detected Constituents at W-4, Revolon Slough (1997-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	2	100%	22.5	22.5	0.72
Total Organic Carbon	mg/L	1	100%	ID	ID	ID
Conductivity	umho/cm	2	100%	851	851	0.04
pH	pH units	2	100%	7.7	7.7	0
Total Dissolved Solids	mg/L	2	100%	566	566	0.13
Total Suspended Solids	mg/L	2	100%	1880	1880	1.2
Hardness	mg/L	2	100%	294	294	0.29
Chloride	mg/L	2	100%	35	35	0.12
Nutrients						
Ammonia-Nitrogen	mg/L	2	100%	0.8	0.8	0.18
Kjeldahl-Nitrogen	mg/L	2	100%	7.5	7.5	0.60
Nitrate Nitrogen	mg/L	2	100%	7.6	7.6	0.12
Orthophosphate-P	mg/L	2	100%	0.32	0.32	0.02
Phosphorus, Total	mg/L	2	100%	2.6	2.63	0.21
Phosphorus, Dissolved	mg/L	2	100%	0.4	0.35	0.08
Bacteriological[2]						
Total Coliform	MPN/100ml	2	100%	200,000	200,000	0.28
Fecal Coliform	MPN/100ml	2	100%	13,000	13,000	0
Fecal Streptococcus	MPN/100ml	2	100%	162,000	162,000	1.20
Metals						
Arsenic, Total	µg/L	2	100%	21.5	21.5	0.43
Arsenic, Dissolved	µg/L	2	100%	2.1	2.1	0.88
Cadmium, Total	µg/L	2	100%	2.6	2.6	0.27
Cadmium, Dissolved	µg/L	2	100%	0.5	0.45	0.79
Chromium, Total	µg/L	2	100%	83.5	83.5	0.77
Chromium, Dissolved	µg/L	2	100%	2.5	2.45	0.26
Copper, Total	µg/L	2	100%	92.5	92.5	0.45
Copper, Dissolved	µg/L	2	100%	12	12	0
Lead, Total	µg/L	2	100%	21	21	0.67
Mercury, Total	µg/L	2	100%	0.12	0.12	0.68
Mercury, Dissolved	µg/L	2	100%	0.0025	0.0025	0.73
Nickel, Total	µg/L	2	100%	72	72	0.63
Nickel, Dissolved	µg/L	2	100%	4.8	4.8	0.94
Selenium, Total	µg/L	2	100%	1.6	1.6	0.09
Silver, Total	µg/L	2	50%	ID	ID	ID
Silver, Dissolved	µg/L	2	50%	ID	ID	ID
Zinc, Total	µg/L	2	100%	267	267	0.60
Zinc, Dissolved	µg/L	2	100%	28.5	28.5	0.57
EPA 625						
1-Methylphenanthrene	ng/L	2	100%	16	16	0.18
Benzo(e)pyrene	ng/L	2	50%	ID	ID	ID
Chrysene	ng/L	2	50%	ID	ID	ID

Table 9 - 21
Summary Statistics for Detected Constituents at W-4, Revolon Slough (1997-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Fluoranthene	ng/L	2	100%	77.5	77.5	0.05
Phenanthrene	ng/L	2	100%	86.5	86.5	0.14
Pyrene	ng/L	2	100%	59.5	59.5	0.01
bis(2-ethylhexyl)phthalate	ng/L	2	100%	306	306	1.2
Butyl benzyl phthalate	ng/L	2	50%	ID	ID	ID
Di-n-octyl phthalate	ng/L	2	100%	280	280	1.2
Dibutyl phthalate	ng/L	2	50%	ID	ID	ID
Diethyl phthalate	ng/L	2	100%	67.5	67.5	0.35
Dimethyl phthalate	ng/L	2	100%	22.5	22.5	0.28
EPA 8080						
2,4'-DDD	ng/L	2	100%	9.0	9.0	0.16
2,4'-DDE	ng/L	2	100%	9.5	9.5	0.52
2,4'-DDT	ng/L	2	100%	15.5	15.5	0.14
4,4' - DDD	ng/L	2	100%	23.5	23.5	0.39
4,4' - DDE	ng/L	2	100%	208	208	0.87
4,4' - DDT	ng/L	2	100%	140	140	1.1
gamma-BHC	ng/L	2	100%	7.0	7.0	0.61
alpha-Chlordane	ng/L	2	50%	ID	ID	ID
gamma-Chlordane	ng/L	2	50%	ID	ID	ID
EPA 8140						
Diazinon	µg/L	2	50%	ID	ID	ID

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

9.3.4.2 Bioassay Results

Toxicity samples were collected at three of the four sites during at least one storm and a TIE was conducted on samples collected in 1997/98. The results of toxicity samples collected at the receiving water sites are summarized in the Table 9-22 (shown below).

Table 9 - 22
Survival Rates of Ceriodaphnia for Receiving Water Monitoring Sites

	Percent Survival of Ceriodaphnia (LC50)		
Storm Event Date	W-1	W-3	W-4
1/31/96[1]	0%	NS	NS
2/19/96[1]	20%	NS	NS
12/10/96[1]	0%	NS	NS
11/26/97	NS	<6.25%	NS
12/5/97	NS	17%	17%
3/24/98	NS	76%	100%

1 Data reported as EC50 for these storm events.
NS Toxicity samples not collected at this site during the listed monitoring event.

A TIE was conducted on samples collected during two events sampled in 1997/98. The primary toxicant classes identified as causing toxicity and any other classes contributing to the toxicity of the receiving water samples are summarized in Table 9-23 (shown below).

Table 9 - 23
Summary of TIE Results

Sample Site	Primary Toxicant Class	Classes Possibly Contributing to Toxicity
W-3 (11/26/97)	Volatile compounds[1]	
W-3 (12/5/97)	Non-polar organic compounds [2]	Volatile or oxidizable compounds Particulate-bound toxins

1 Toxicity in samples dissipated before TIE manipulations could be conducted. Therefore, the toxicity was assumed to be due primarily to volatile compounds.
2 Adjustment of the sample pH indicates that the toxicant is probably not degraded under acidic or basic conditions.

Results of the 1997/98 TIEs are to be confirmed by toxicity samples collected in 1998/99.

9.3.4.3 Malibu Creek Watershed Receiving Water Sites

Water quality results obtained for the special receiving water study conducted in the Malibu Creek Watershed are summarized in Tables 9-24 through 9-26 (on pages 9-33 through 9-35).

Table 9 - 24
Summary Statistics for Detected Constituents at LC-1, Lindero Canyon (1996-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	5	40%	ID	ID	ID
COD	mg/L	3	33%	ID	ID	ID
Total Organic Carbon	mg/L	5	60%	15.7	5.3	1.1
Conductivity	umho/cm	5	100%	2580	2610	0.48
pH	pH units	5	100%	7.7	7.7	0.01
Total Dissolved Solids	mg/L	5	100%	2130	2060	0.53
Total Suspended Solids	mg/L	5	100%	102	26	1.4
Hardness	mg/L	3	100%	895	1040	0.59
Chloride	mg/L	2	100%	244	244	0.27
Nutrients						
Ammonia-Nitrogen	mg/L	5	60%	0.48	0.4	0.88
Kjeldahl-Nitrogen	mg/L	5	80%	2.4	1.4	1.1
Nitrate Nitrogen	mg/L	5	60%	0.65	0.32	1.6
Orthophosphate-P	mg/L	2	100%	0.17	0.17	0.08
Phosphorus, Total	mg/L	5	100%	0.37	0.24	0.87
Phosphorus, Dissolved	mg/L	5	100%	0.22	0.19	0.61
Bacteriological[2]						
Total Coliform	MPN/100ml	8	100%	30,800	8000	1.7
Fecal Coliform	MPN/100ml	8	100%	8440	1900	1.4
Fecal Streptococcus	MPN/100ml	8	100%	28,000	8000	1.9
Metals[3]						
Arsenic, Total	µg/L	4	75%	3.0	2.2	0.97
Arsenic, Dissolved	µg/L	2	100%	1.3	1.3	0.54
Cadmium, Total	µg/L	4	100%	4.1	2.9	1.0
Cadmium, Dissolved	µg/L	2	50%	ID	ID	ID
Chromium, Total	µg/L	4	100%	10.2	10.5	0.16
Chromium, Dissolved	µg/L	2	100%	3.0	3.5	0.61
Copper, Total	µg/L	4	100%	21.0	20.0	0.49
Copper, Dissolved	µg/L	2	100%	9.5	9.5	0.67
Lead, Total	µg/L	4	100%	26.3	15	1.2
Lead, Dissolved	µg/L	2	100%	8.0	8.0	1.2
Mercury, Total	µg/L	4	50%	ID	ID	ID
Mercury, Dissolved	µg/L	2	100%	0.0021	0.0021	0.26
Nickel, Total	µg/L	4	100%	34.0	37.0	0.52
Nickel, Dissolved	µg/L	2	50%	ID	ID	ID
Selenium, Total	µg/L	4	75%	2.9	2.7	0.47
Selenium, Dissolved	µg/L	2	50%	ID	ID	ID
Silver, Total	µg/L	4	75%	1.0	1	0.19
Silver, Dissolved	µg/L	2	50%	ID	ID	ID
Zinc, Total	µg/L	4	100%	43.5	23.5	1.1
Zinc, Dissolved	µg/L	2	100%	12.5	12.5	0.85

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 25
Summary Statistics for Detected Constituents at LV-1, Las Virgenes Creek (1996-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	4	50%	ID	ID	ID
COD	mg/L	2	50%	ID	ID	ID
Total Organic Carbon	mg/L	4	100%	15.1	12	0.64
Conductivity	umho/cm	4	100%	2600	2660	0.55
pH	pH units	4	100%	7.7	7.8	0.03
Total Dissolved Solids	mg/L	4	100%	2280	2270	0.59
Total Suspended Solids	mg/L	4	100%	54.3	25.5	1.3
Hardness	mg/L	3	100%	993	959	0.57
Chloride	mg/L	2	100%	85.0	85.0	0.82
Nutrients						
Ammonia-Nitrogen	mg/L	4	25%	ID	ID	ID
Kjeldahl-Nitrogen	mg/L	4	100%	2.3	1.9	0.73
Nitrate Nitrogen	mg/L	4	75%	1.0	0.67	1.1
Orthophosphate-P	mg/L	2	100%	0.47	0.47	0.87
Phosphorus, Total	mg/L	4	100%	0.49	0.36	0.82
Phosphorus, Dissolved	mg/L	4	100%	0.36	0.27	0.75
Bacteriological[2]						
Total Coliform	MPN/100ml	4	100%	13,800	15,500	0.72
Fecal Coliform	MPN/100ml	4	75%	8240	4400	1.4
Fecal Streptococcus	MPN/100ml	4	100%	31,100	17,000	1.3
Metals[3]						
Arsenic, Total	µg/L	3	67%	ID	ID	ID
Arsenic, Dissolved	µg/L	2	50%	ID	ID	ID
Cadmium, Total	µg/L	3	100%	5.1	6.4	0.71
Cadmium, Dissolved	µg/L	2	100%	2.7	2.7	1.3
Chromium, Total	µg/L	3	100%	14.8	6.3	1.1
Chromium, Dissolved	µg/L	2	100%	9.0	9.0	0.94
Copper, Total	µg/L	3	100%	14.3	15	0.28
Copper, Dissolved	µg/L	2	100%	13.5	13.5	0.37
Lead, Total	µg/L	3	67%	ID	ID	ID
Mercury, Total	µg/L	3	67%	ID	ID	ID
Mercury, Dissolved	µg/L	2	100%	0.0032	0.0032	0.90
Nickel, Total	µg/L	3	100%	32.7	39.0	0.42
Nickel, Dissolved	µg/L	2	100%	22.0	22.0	0.77
Selenium, Total	µg/L	3	100%	3.3	2.4	0.75
Selenium, Dissolved	µg/L	2	100%	2.9	2.9	0.88
Silver, Total	µg/L	3	100%	0.90	1.0	0.73
Silver, Dissolved	µg/L	2	50%	ID	ID	ID
Zinc, Total	µg/L	3	100%	28.0	37.0	0.68
Zinc, Dissolved	µg/L	2	100%	19.5	19.5	1.1

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

Table 9 - 26
Summary Statistics for Detected Constituents at MC-1, Medea Canyon (1996-1998)[1]

Parameter	Units	# Samples	% Detected	Mean	Median	Coefficient of Variation
Conventionals						
BOD	mg/L	5	40%	ID	ID	ID
COD	mg/L	3	67%	ID	ID	ID
Total Organic Carbon	mg/L	5	60%	16.1	4.7	1.2
Conductivity	umho/cm	5	100%	2120	1590	0.54
pH	pH units	5	100%	7.8	7.8	0.02
Total Dissolved Solids	mg/L	5	100%	1690	1230	0.59
Total Suspended Solids	mg/L	5	100%	207	184	0.98
Hardness	mg/L	3	100%	616	712	0.34
Chloride	mg/L	2	100%	178	178	0.52
Nutrients						
Ammonia-Nitrogen	mg/L	5	60%	0.40	0.17	1.7
Kjeldahl-Nitrogen	mg/L	5	80%	4.1	1.2	1.2
Nitrate Nitrogen	mg/L	5	80%	1.1	0.57	1.4
Orthophosphate-P	mg/L	2	100%	0.20	0.20	0.40
Phosphorus, Total	mg/L	5	100%	0.59	0.36	0.96
Phosphorus, Dissolved	mg/L	5	100%	0.24	0.15	0.93
Bacteriological[2]						
Total Coliform	MPN/100ml	8	100%	42,800	18,500	1.3
Fecal Coliform	MPN/100ml	8	100%	17,800	7000	1.7
Fecal Streptococcus	MPN/100ml	8	100%	36,800	4000	1.6
Metals[3]						
Arsenic, Total	µg/L	4	75%	4.8	4.5	0.38
Arsenic, Dissolved	µg/L	2	100%	0.50	0.50	0
Cadmium, Total	µg/L	4	100%	2.6	2.5	0.69
Cadmium, Dissolved	µg/L	2	50%	ID	ID	ID
Chromium, Total	µg/L	4	100%	17.0	15.9	0.39
Chromium, Dissolved	µg/L	2	100%	5.0	5.0	0.57
Copper, Total	µg/L	4	100%	51.0	47.5	0.86
Copper, Dissolved	µg/L	2	100%	22.0	22	1.1
Lead, Total	µg/L	4	100%	26.3	16	1.2
Lead, Dissolved	µg/L	2	50%	ID	ID	ID
Mercury, Total	µg/L	4	50%	ID	ID	ID
Mercury, Dissolved	µg/L	2	100%	0.003	0.003	0.05
Nickel, Total	µg/L	4	100%	33.8	37.0	0.56
Nickel, Dissolved	µg/L	2	100%	18.0	18.0	1.2
Selenium, Total	µg/L	4	75%	1.5	1.5	0.42
Selenium, Dissolved	µg/L	2	50%	ID	ID	ID
Silver, Total	µg/L	4	100%	0.83	0.9	0.47
Silver, Dissolved	µg/L	2	50%	ID	ID	ID
Zinc, Total	µg/L	4	100%	118	111	0.88
Zinc, Dissolved	µg/L	2	100%	72.0	72.0	1.2

1 The Helsel Method (1990) was used to assign concentrations to non-detected samples.
2 In cases where microbiological counts were reported as greater than 160,000 MPN/mL, 160,000 MPN/mL was used as the count value for statistical purposes.
3 The 1996/97 metals data that were censored due to data quality problems were not included in the calculations.
ID Insufficient data available for analysis. For the non-detect analysis, at least 3 detected values were required and at least 20% of the samples had to be detected. If all samples were detected, there had to be at least 2 sample results for statistics to be generated.

9.3.5 Proposed Receiving Water and Watershed Monitoring

The proposed receiving water and watershed monitoring program includes monitoring in four watersheds: Revolon Slough, Ventura River, Calleguas Creek, and the Santa Clara River. The Revolon Slough monitoring will be continued at the La Vista Drain (W-3) and Wood Road (W-4) sites. Bioassessment monitoring on the Ventura River and mass emission monitoring on the Ventura River, Calleguas Creek and the Santa Clara River will be initiated during this permit term. In addition, participation in a number of watershed groups and activities will be pursued.

9.3.5.1 Revolon Slough Watershed

Due to the relocation of two of the original sites, only two years of data have been collected at La Vista Drain (W-3) and Revolon Slough at Wood Road (W-4). For this reason, monitoring of W-3 and W-4 will be continued during this permit term until five storms have been captured. Table 9-27 (shown below) summarizes the proposed Revolon Slough Watershed monitoring.

Table 9 - 27
Proposed Monitoring in Revolon Slough Watershed

Monitoring Station	Minimum Number of Events (per year)	Type of Sample	Constituents[1]
W-3, La Vista Drain	1[2]	Automated composite and grab samples	Metals Organics Conventional Inorganics Microbiological Toxicity and TIEs[3]
W-4, Revolon Slough @ Wood Road	1[2]	Composite and Grab	Metals Organics Conventional Inorganics Microbiological Toxicity and TIEs[3]

1 The list of specific constituents, analytical methods, detection limits, and holding times is included in Appendix G.
2 A maximum of five events will be monitored during the permit term.
3 Toxicity monitoring will occur during at least 1 storm event a year until baseline information has been collected, and then be discontinued. Toxicity Identification Evaluation (TIE) shall be performed when acute toxicity results are greater than 1 TUa. Freshwater acute toxicity tests shall be conducted on the most sensitive of the two species - Fathead minnow and Ceriodaphnia.

Samples will be collected in conjunction with sample collection at the discharge characterization sites whenever possible.

9.3.5.2 Bioassessment Monitoring in the Ventura River

To assess urban runoff impacts on the macroinvertebrate community structure in the Ventura River, a bioassessment monitoring program will be undertaken during this permit term. The bioassessment program will consist of aquatic macroinvertebrate monitoring at fourteen stations on the Ventura River. These stations will allow the assessment of a variety of impacts from urban and rural runoff. Two of the sites chosen have not been impacted by runoff or physical modifications and will be used as reference sites for comparison of the monitoring results from the other twelve locations. Table 9-28 (shown below) summarizes the proposed bioassessment monitoring locations.

Table 9 - 28.
Proposed Bioassessment Monitoring Stations

Stn. ID	Description	Impact Assessment
2*	Ventura – Shell Road	All land uses
3	Canada Larga -	Grazing
4	Canada Larga -	Reference for Canada Larga
5	Ventura - Foster Park	Urban, dam, quarry
6	San Antonio - near Vta conf	San Antonio Creek
7*	Lion Canyon - near San Antonio	San Antonio Creek, stables, grazing
8	Stewart Canyon - near San Antonio	San Antonio Creek, semi-rural development
10	Ventura - below Matilaja Dam	Matilija Dam, non-urban
11	North Fork Matilija - at gauging station	Non-impacted site
11b*	North Fork Matilija - u/s Ventura conf	Quarry
12	Matilija - @ gate at end of road	Non-impacted site
13	Matilija - below community	Matilija Creek above dam, development impact
14	Ventura - at Hwy 150	Development impact
15	Ventura - at Santa Ana Road	Development impact

* These sites require either clearance from private landowners or special needs for accessing the site.
Detailed monitoring procedures will be as described in the *Ventura Countywide Stormwater Monitoring Program: In-stream Bioassessment Monitoring Program, Ventura River*, which is included as Appendix G of this report.

Monitoring will be conducted once a year in the fall for a minimum of two years to establish baseline conditions. The sampling protocol will follow the procedures outlined in the California Stream Bioassessment Procedures developed by the California Department of Fish and Game, which is based on the Rapid Bioassessment Protocols, developed by the US EPA. Volunteer monitoring will be incorporated in the bioassessment monitoring program where possible.

9.3.5.3 Mass Emission Monitoring

Mass emission monitoring provides a mechanism for evaluating the amount of pollutants in a waterbody. The monitoring will include the collection of flow and water quality information at a specified location in a waterbody, which can then be used to estimate loadings at that point. Mass emission monitoring will be conducted during this permit term to establish baseline conditions and load estimates for the Ventura River, Calleguas Creek, and Santa Clara River. Monitoring on the Ventura River and Calleguas Creek will begin with the 2000-2001 monitoring season, and the Santa Clara River will be monitored starting with the 2001-2002 season. Samples will be collected during dry and wet weather for up to six events every year. At least two of the events monitored will be dry events.

One monitoring location will be established for each waterbody and sampled for a variety of water quality constituents. Each site will be equipped with automated monitoring equipment, which includes an automatic sampler, flow meter, and possibly a precipitation gauge. The proposed monitoring locations are described in the Table 9-29 (shown below).

Table 9 - 29.
Proposed Mass Emission Monitoring Locations and Requirements[4]

Site Code	Monitoring Station	Number of Events	Sample Type	Constituents[1]
ME-CC	Calleguas Creek – California State University at Channel Island bridge	Up to 6 per year (beginning with the 2000-01 season)[2]	Automated composite and grab samples	Metals, Organics, Conventional Inorganics, Microbiological Toxicity and TIEs[3]
ME-VR	Ventura River – Foster Park	Up to 6 per year (beginning with the 2000-01 season)[2]	Automated composite and grab samples	Metals, Organics, Conventional Inorganics, Microbiological Toxicity and TIEs[3]
ME-SCR	Santa Clara River – Freeman Diversion	Up to 6 per year (beginning with the 2001-02 season)[2]	Automated composite and grab samples	Metals, Organics, Conventional Inorganics, Microbiological Toxicity and TIEs[3]

1 The list of specific constituents, analytical methods, detection limits, and holding times is included in Appendix G-1.
2 Includes a minimum of two dry weather events per monitoring season.
3 Toxicity monitoring shall occur during two storm events per monitoring season (preferably the first significant storm and one other event) and one dry weather event per monitoring season. Chronic toxicity test shall be conducted using the most sensitive marine species. A Toxicity Identification Evaluation (TIE) shall be performed when toxicity manifests in two consecutive wet weather samples, or any dry weather flow sample.
4 Detailed monitoring procedures will be as described in the *Ventura Countywide Stormwater Monitoring Plan Standard Operating Procedures-2000-2005 Mass Emission Monitoring* (SOPs) included as Appendix G of this report.

Event and annual mass emission calculations will be developed using the water quality data obtained from the collected samples and flow information obtained from USGS/VCFCD depth and recording equipment present at both the Calleguas Creek and Ventura River monitoring locations.

9.3.5.4 Watershed Group and Regional Monitoring Participation

Recently, watershed management has become a large component of water quality and water resource activities throughout Ventura County. As such, participation in various watershed groups established in the County will be a component of the monitoring program. VCFCD will participate in appropriate water quality meetings of the Santa Clara River Enhancement and Management Plan, the Calleguas Creek Watershed Management Plan, and the Steelhead Restoration and Recovery Plan. Additionally, work is being conducted as part of a Federal 205(j) non-point source grant in the Calleguas Creek watershed. VCFCD monitored six sites during two dry weather and two wet weather events in 1998/99 as part of the grant study. Participation in additional activities and monitoring related to grant activities will be conducted as necessary.

In addition to the watershed management activities listed above, the Southern California Coastal Water Research Project (SCCWRP) has established a Regional Monitoring Program for Southern California municipal programs. Participation in the storm water studies with SCCWRP will be conducted as set out in the Memorandum of Agreement for the program.

Another activity that will be conducted related to watershed programs in the region is the promotion of volunteer monitoring programs in the coastal watersheds. Volunteer monitoring can be a useful source of many types of watershed information. A plan to identify appropriate volunteer monitoring projects will be developed and work will be done to help develop and implement volunteer monitoring programs for appropriate projects.

9.4 Pollutant Source Identification

An important part of the development and progression of the Program is the determination of pollutants of concern (POCs) and the identification of sources of those pollutants. The development of POCs, identification of sources of the POCs, and investigation of strategies to control POC discharges from those sources focuses the stormwater management program on control measures that provide the greatest environmental benefit. During the first permit term, the Program identified and prioritized POCs and started work on identifying general sources of the prioritized POCs. The focus of this permit term will be the identification and investigation of urban sources of POCs and investigation of methods to control discharges of POCs in urban runoff.

9.4.1 Pollutant of Concern Identification and Prioritization

During 1997/98, the Program identified and prioritized pollutants of concern (POCs) for stormwater and discussed, as part of the POC Working Group, general sources and best management practices (BMPs) for priority POCs.

Identifying POCs allows the program to focus efforts and resources on constituents that have the greatest impact on receiving waters. Monitoring data obtained through the stormwater monitoring program allowed a numeric and qualitative assessment of the constituents of most concern to the Program. The information gathered during the POC identification process was then used to prioritize (into Tier 1 and Tier 2) the pollutants of concern. Pollutants identified as Tier 1 POCs were targeted for investigation to determine general sources of the constituents and to develop BMPs to control the sources. The ranked POCs are listed in Table 9-30 (shown below).

Table 9 - 30
Tier 1 and Tier 2 Pollutants of Concern

Pollutant of Concern	***Method/Class***
Tier 1 Pollutants of Concern	
Coliform, Total	Bacteria
Mercury, Total	Metal
Coliform, Fecal	Bacteria
PAHs	PAH
DDT and by-products	OC Pesticide
Diazinon	OP Pesticide
Sediment/TSS	Conventional
Tier 2 Pollutants of Concern	
Chlorpyrifos	OP Pesticide
Copper [1]	Metal
Lead [1]	Metal
Thallium [2]	Metal
Bis(2-Ethylhexyl)Phthalate	Phthalate
Phosphorus	Conventional

Notes:
1) Water quality criterion comparison based on dissolved metal concentration.
2) Water quality criterion comparison based on total metal concentration.

Other stormwater programs and groups with similar pollutant issues have investigated sources of the Tier 1 POCs identified by the Program. A significant amount of information has been collected and is available for review and evaluation. The POC Workgroup conducted an initial review of the collected information and generated a preliminary list of potential general sources of the POCs. General sources of the Tier 1 POCs are listed in Table 9-31 (on page 9-42) based on source type.

9.4.2 Proposed POC Source Identification Plan

During this permit term, activities will be conducted to investigate the sources of the POCs identified during the first permit term and develop possible control measures to address the identified sources of POCs. Each year a progress report will be submitted to the Regional Board regarding the sources of POCs, BMPs proposed for control of POCs, and an assessment of the effectiveness of the BMPs as part of the *Annual Storm Water Report and Assessment*.

9.4.2.1 General Source Investigation

During this permit term, the general source information shown in Table 9-31 (on page 9-42) will be used as a starting point to investigate specific urban sources of POCs in the permit area.

Information collected under the illicit discharge program, discharge characterization monitoring data, inspection information, literature reviews and other available information will be used to identify areas where significant discharges of POCs could be occurring. During this review process, locations of the general sources of these constituents listed in Table 9-31 (on page 9-42) and other sources identified by literature reviews in the permit area will be identified. The located sources will be compared to other data gathered through the Program and proximity to receiving waters to create a prioritized list of areas and sources within the permit area, if any, where significant discharges may be occurring. This information will be used to identify potential control measures for the sources of POCs in urban areas of Ventura County.

Table 9 - 31
General Sources of Tier 1 POCs

POC	***Source Category***		
	Atmospheric	***Natural***	***Human Activities***
Coliform	▪ Dust/sediment Deposition	▪ Animals ▪ Birds ▪ Soils	▪ Sewage from leaks, spills and illicit connections ▪ Outdoor defecation ▪ Pet and livestock waste ▪ Diaper cleaning and disposal ▪ Landfills containing animal and human waste
Mercury	▪ Dust/sediment deposition ▪ Precipitation ▪ Smog	▪ Soil	▪ Use and improper disposal of: thermometers, barometers, electrical switches, fluorescent light bulbs, batteries, paints and fungicides that contain mercury, and miscellaneous household products ▪ Hospitals and dental offices ▪ Industrial manufacturing facilities[1] ▪ Leachate from decomposition of landfill material containing mercury ▪ Hazardous waste storage areas and collection facilities ▪ Automobile repair, salvage, and recycling services ▪ Battery recyclers ▪ Sewage from leaks, spills and illicit connections ▪
Diazinon	▪ Spraying ▪ Precipitation		▪ Pesticide applications ▪ Improper pesticide use and disposal ▪ Sewage from leaks, spills and illicit connections ▪ Landfill leachate from improper pesticide disposal ▪ Pesticide manufacturer, storage, and transport ▪ Household hazardous waste collection areas
DDT	▪ Dust/sediment deposition ▪ Precipitation	▪ Soil (from previous applications of DDT)	▪ Sewage from leaks, spills and illicit connections ▪ Erosion and sedimentation ▪ Use of chemicals containing DDT as a minor constituent ▪ Leachate from industrial landfills where products containing DDT decompose ▪ Hazardous waste storage areas and collection facilities
PAHs	▪ Dust/sediment deposition ▪ Precipitation ▪ Smog and stack emissions	▪ Soil ▪ Forest and brush fires ▪ Decaying organic matter	▪ Emissions from incinerators, furnaces, fireplaces, barbecues, and wood burning stoves ▪ Emissions from vehicles and other equipment or machinery ▪ Emissions from facilities or operations that use fossil fuel, wood or other organic matter as fuel source ▪ Emissions from restaurants ▪ Roofing and asphalt material ▪ Roadways and parking areas ▪ Building fires ▪ Food waste from barbecued food ▪ Sewage from spills, leaks, and illicit connections ▪ Industrial manufacturers[2] ▪ Wood materials preserved with creosote

1 Industrial sources include: Adhesive Manufacturers, Battery Manufacturers, Electrical and Electronic Component Manufacturing, Electroplating/Metal Finishing, Inorganic and Organic Chemical Manufacturing, Non-ferrous metal Manufacturing, Paint and Ink Manufacturing, Pharmaceutical Manufacturing, Photographic Supply Manufacturing, Steam Electric Power, Textile Mills.

2 Industrial facilities include: Pharmaceutical Manufacturing, Biological and Chemical Research, Power Plants, Roofing Industry, Paving Industry, Coke Manufacturers, Incinerator Operations, Metal and Foundry Operations, Briquette Manufacturing, Dye Manufacturing, Railway Manufacturing and Repair, Automobile Repair, Petroleum Refining, Timber Products, Rubber Manufacturing, Pulp, Paper, Fiberboard Manufacturing, Paint and Ink Manufacturing, Battery Manufacturing, Electrical and Electronic Component Manufacturing.

Table 9 - 31
General Sources of Tier 1 POCs

POC	Source Category		
	Atmospheric	**Natural**	**Human Activities**
TSS/ Sediment	▪ Dust/sediment deposition ▪ Precipitation ▪ Smog	▪ Soil	▪ Construction sites and activities ▪ Roofs and other erodible housing material ▪ Landscaping activities ▪ Irrigation waters ▪ Rinse and wash waters from cleaning activities ▪ Emissions from fireplaces or other stacks ▪ Open spaces, exposed and disturbed land ▪ Illicit or approved connections from cooling towers or boiler operations ▪ Bulk storage areas ▪ Material handling, use, disposal, and cleanup procedures ▪ Streets, roads, parking lots, and other erodible surfaces ▪ Landfills

9.4.2.2 Control Measure Investigation

In coordination with the POC source identification, methods to control POC discharges will be investigated. Control measure investigation will identify source specific and general measures that have potential to cost-effectively control POC discharges.

9.5 Management Program Effectiveness

9.5.1 Control Measure Effectiveness

Discharge characterization and receiving water monitoring provides the opportunity for the Program to demonstrate long-term effectiveness of the stormwater program. Control measure effectiveness evaluations are designed to assess a specific control measure or BMP to determine its ability to reduce discharges of pollutants in urban runoff or its applicability to certain applications. Monitoring efforts of the effectiveness of control measures are being conducted throughout the management program and are described in the performance standards for the other elements of the management program. Additionally, other agencies throughout the United States have conducted a number of studies to examine the effectiveness of control measures and a large amount of literature is available about public domain BMPs. As part of the monitoring program, control measure effectiveness will be evaluated through literature reviews, discussions with other agencies, and the gathering of available information where possible. If deemed necessary, special studies will be identified to help the stormwater management program evaluate and implement specific (generally structural) control measures to achieve the goals of the program.

9.5.2 Pollutant Loading

One important use of the collected discharge monitoring data is the determination of pollutant loads from the permitted area. During the first permit term, the Program developed a pollutant load model that provided a preliminary estimate of annual pollutant loads from urban discharges. The following sections describe the effort and the proposed activities to refine these pollutant loads over the next permit term.

9.5.2.1 Watershed Delineation/Land Use Specification

In general, southern Ventura County has three major watersheds: Ventura River, Santa Clara River, and Arroyo Simi/Calleguas Creek. Table 9-32 (shown below) summarizes the land uses within the three watersheds.

Table 9 - 32
Land Uses Within Ventura County

	Watersheds					
	Ventura River		***Santa Clara River***		***Calleguas Creek***	
Land Use	***Area (acres)***	***% of Total***	***Area (acres)***	***% of Total***	***Area (acres)***	***% of Total***
Urban	14,384	8	11,445	2	87,728	36
Agriculture	1,322	1	35,541	7	72,081	30
Open/Rural	162,854	91	482,934	91	73,978	31
State/Federal	0	0	0	0	7,493	3
TOTAL	178,560	100	529,920	100	241,280	100

Source: Ventura County General Plan Land Use Map
Note: National Forest Land is included in Open/Rural category.

For the southern portion of Ventura County, including all the permitted areas, specific watershed and land use delineation was conducted. Using drainage master plans, VCFCD hydrology reports, and aerial photography, information was collected for 313 sub-areas that include the total acreage and land use percentage for undeveloped/open space, agricultural, residential, industrial, commercial, and open water/wetlands. The collected information was used in the development of the current pollutant load model. Since the model was developed, VCFCD has developed a GIS system that allows a more detailed delineation of land uses throughout the County.

9.5.2.2 Current Pollutant Load Estimates

During the 1996/97 monitoring year, a water quality/management model was developed to estimate pollutant loadings and assess the relative contribution of runoff from the permitted area to overall pollutant loadings in Ventura County runoff. The Watershed Management Model (WMM), as developed by Camp Dresser & McKee (CDM), was used as the basis for developing pollutant load estimates. This steady-state model combined constituent concentrations (as measured by EMCs) collected under the monitoring program for the years 1993-96 with watershed-specific rainfall totals, land use data, and runoff coefficient data to estimate annual pollutant loads. All calculations consider the land use distribution in the sub-areas and spatial differences in annual rainfall.

Ventura County constituent EMCs (1993-96) were used for input into the model whenever possible. When representative EMCs were not available directly from site-specific monitoring data, Nationwide Urban Runoff Program (NURP) data or WMM recommended values were used. Table 9-33 (shown below) contains all mean EMCs used for modeling and a reference to their source.

Table 9 - 33
Mean EMCs (1993-96) used in Modeling Pollutant Loads

	Oxygen Demand & Solids				***Total Recoverable Metals***				***Nutrients***			
	BOD	***COD***	***TDS***	***TSS***	***Cd***	***Cu***	***Pb***	***Zn***	***DP***	***TP***	***NO2/3***	***TKN***
Land Use	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Open [1]	8	51	100	216	2.0	0	9	234	0.06	0.23	0.73	1.36
Agriculture [2]	95	216	504	1,065	5.4	83	15	196	2.79	4.20	17.35	7.20
Residential [2]	20	146	79	131	1.1	22	20	124	0.40	0.54	1.49	3.08
Industrial [2]	23	99	91	278	1.4	25	13	143	0.37	0.50	1.36	2.42
Commercial [1]	10	61	100	91	2.4	37	24	331	0.10	0.24	0.63	1.28
Open Water [3]	3	22	100	26	0.0	0	0	110	0.01	0.03	0.60	0.60

Notes:
1 Calculated from NURP median values (EPA, 1983a; Table 6-12) except:
- Pb suggested by more recent studies (Walker, 1990)
- BOD and Cu [Undeveloped/Open only] from WMM Manual (CDM, 1992; Table 2-1)
- Cd and TDS from WMM Manual (CDM, 1992; pg. 2-10).

2 Based on Ventura County monitoring data.
3 WMM Manual (CDM, 1992; Table 2-1).

Using the data inputs and the methodology described in the annual report for Permit Year 3 (VCSQMP, 1997), annual stormwater loadings of pollutants were estimated. Estimated annual stormwater loads are presented in Table 9-34 (on page 9-46) for permitted and non-permitted areas. The distribution of loads shown in this table generally reflects the ratio (4:1) of non-permitted to permitted land in the southern county.

Table 9 - 34 Estimated Mean Annual Loads for Southern Ventura County				
Constituent		**NPDES-Permitted**	**Non-permitted**	**Total**
Conventional (tons/yr.)	BOD	1,921	7,010	8,931
	COD	9,763	26,143	35,905
	TDS	10,418	50,472	60,890
	TSS	20,505	106,732	127,237
Metals (tons/yr.)	Cd	0.15	0.76	0.92
	Cu	1.97	4.62	6.59
	Pb	1.39	3.38	4.77
	Zn	14.91	68.93	83.85
Nutrients (tons/yr.)	DP	41	158	199
	TP	62	269	331
	NO2/3	215	1,040	1,255
	TKN	234	748	982

Pollutant loadings from the permitted and non-permitted areas were proportionate to their respective areas with the exception of total recoverable copper and TKN, where the permitted area contributed 30 and 24 percent respectively of the pollutant load versus 19 percent of the land area.

The existing WMM model provides a good planning level estimate of stormwater runoff pollutant loads. The model was developed as a stormwater quality management tool and can be used to analyze the potential effect of best management practices (BMP) on pollutant loadings. Activities conducted during the upcoming permit term will expand upon these capabilities.

9.5.2.3 Proposed Activities to Improve Pollutant Load Estimates

The existing WMM model provides sufficient information for the planning and implementation of the stormwater management program. However, the development of Total Maximum Daily Loads (TMDLs) for the impaired waterbodies in Ventura County could require the use of more sophisticated models. If deemed necessary to assist with the development of TMDLs, the WMM model will be updated to meet the needs of the TMDL development.

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